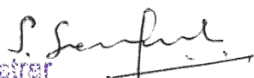




Institutional Values and best practices

1. Kiran Majumdar Shaw Centre for Sustainable Innovation (KMSCAI)
2. Innovation Incubator E-Cell
3. Study Abroad Programme (SAP)
4. Minor/Flexi Degree
5. 24*7 University
6. Social Awareness Programme (SAP)
7. Central Instruments Research Facility (CIRF)
8. Military Training Camp
9. Good Lab Practices
10. DST-FIST Lipidomics Research Facility
11. DST-FIST Nanotechnology for Healthcare and Environment
12. Center of Excellence-
 - a. Amity Center of Ocean Atmosphere Science & Technology
 - b. Amity Centre for Robotics & AI
 - c. Amity Centre for Nanotechnology
 - d. Amity Centre for Stem Cell Research
 - e. GE Healthcare Centre of Excellence in Genomics & Proteomics
 - f. Center for Data Science and Computational Biology
 - g. Amity Centre of Open Learning and Technologies
 - h. Yunus Social Business Center
 - i. Amity Centre for Linguistics Studies
 - j. Kailash Satyarthi Centre for Child Rights & Development
 - k. Amity Center of BRICS Study
 - l. Amity Centre for Financial Analytics
 - m. Amity Center for Innovation in Education
 - A. Skill Development and Vocational Program
 - B. Amity Capacity Building Center
 - C. LEED Lab
 - D. Oréll DIGITAL LANGUAGE LAB
 - E. IIRS-ISRO Network Center Remote Sensing and GIS


Registrar
Amity University Haryana
Manesar, Gurgaon-122413



Kiran Majumdar Shaw Centre for Affordable Innovation

KIRAN MAZUMDAR-SHAW CENTRE FOR AFFORDABLE INNOVATIONS, AMITY UNIVERSITY HARYANA, GURUGRAM, HARYANA, INDIA
 Director: Arvind Chhabra; Mentors: Prof. Rajendra Prasad, Prof. SM Paul Khurana, Prof. PB Sharma, Prof. Padmakali Banerjee
 AMITY UNIVERSITY HARYANA, GURUGRAM, HARYANA, INDIA

<p style="text-align: center;">Kiran Mazumdar-Shaw Center for Affordable Innovation, AUH</p> <div style="display: flex; align-items: center;"> <div style="font-size: 0.8em;"> <p>I want to be remembered as someone who put India on the scientific map of the world in terms of large innovation. I want to be remembered for making a difference to global healthcare. And I want to be remembered as someone who did make a difference to social economic development in India.</p> <p style="text-align: right;">— Kiran Mazumdar-Shaw —</p> <p style="text-align: center;">AZ QUOTES</p> </div> </div> <p style="font-size: 0.7em;">"Affordable innovation, which presents ways to innovate, be flexible, and do more with less, can help a complex and resource-constrained country like India address challenges in healthcare delivery. Such a model can ensure that healthcare is "available" and "accessible" to every citizen of the country on a sustainable basis."</p>	<p style="text-align: center;">AUH KMSCAI Leadership</p> <div style="display: grid; grid-template-columns: repeat(2, 1fr); gap: 10px;"> <div style="text-align: center;"> Prof. Arvind Chhabra Director </div> <div style="text-align: center;"> Prof. Atul Thakur </div> <div style="text-align: center;"> Dr. Machiavelli </div> <div style="text-align: center;"> Dr. Gargi Bagchi </div> <div style="text-align: center;"> Dr. Ranjita Moulik </div> <div style="text-align: center;"> Dr. Anurag Sharma </div> <div style="text-align: center;"> Dr. Nitai Deb Nath </div> <div style="text-align: center;"> Dr. Ranjee Brajpuria </div> <div style="text-align: center;"> Prof. Rajendra Prasad </div> <div style="text-align: center;"> Prof. SP Paul Khurana </div> <div style="text-align: center;"> Prof. PB Sharma </div> <div style="text-align: center;"> Prof. Padmakali Banerjee </div> </div>
<p style="text-align: center;">Objectives</p> <p>To promote affordable innovations in:</p> <ul style="list-style-type: none"> •Disease Biomarker Identification •Diagnostics •Therapeutics •Device development 	<p style="text-align: center;">Forward Looking Statement</p> <ul style="list-style-type: none"> •KMSCAI to be developed as Innovation hub. •Mapping of Amity faculty members to be done, as per their research areas to create a centralized database of status of innovation within Amity Group. •Linkages/collaborations to be facilitated between faculty from within as well as out of Amity Universe through organizing conferences. •Creating synergy with industry or any relevant organizations working in thrust areas. <div style="display: flex; align-items: center;"> <div style="font-size: 0.7em; margin-right: 10px;"> <p>Contact Information: Arvind Chhabra, PhD, Director, Kiran Mazumdar-Shaw Centre for Affordable Innovation (KMSCAI) Professor & Director, Stem Cell Institute, Amity University, Gurugram, Haryana. E-Mail: achhabra@ogn.amity.edu; arvindan@yahoo.com. Phone: +91-9818272758</p> </div> </div>
<p style="text-align: center;">Focus Areas</p> <ul style="list-style-type: none"> •Stem cell-based therapeutics •Bioprocess development •Diagnostics biomarkers identification •Nano-biotechnology for plant as well as animal systems •Communicable and Non communicable diseases •Cancer immunology and immunotherapy •Water Technologies and Water borne diseases •Prevention of Food Adulteration – Detection, Biomarkers 	

Mentors:

- **Prof. PB Sharma, Hon. Vice Chancellor, AUH**
- **Prof. Padmakali Banerjee, Hon. Pro Vice Chancellor, AUH**
- **Prof. Rajendra Prasad, Dean Research, Director, AIB, Director, AIISH, AUH**
- **Prof. SM Paul Khurana, Former Dir. AIB, AUH**

Members:

- **Prof. Arvind Chhabra (Director, KMSCAI), Director Stem Cell Institute**
- **Dr. Vikas Madhukar, Director, Amity Incubator, Deputy Dir. ABS, AUH**
- **Dr. Atul Thakur, Professor & Director, Amity Center of Nanotechnology**
- **Dr. Viveak Ballyan, Assoc. Dir. HR, AUH**
- **Dr. Machiavelli, Associate Professor, AIB**
- **Dr. Gargi Bagchi, Associate Professor, AIB**
- **Dr. Ranjita Ghosh Moulick, Assistant Professor, AIB**



Dr. Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) center was established in 2018 at Amity University Haryana (AUH) with the following mission, vision and focus on the earmarked areas.

Mission: To develop affordable innovations for the benefit of masses with the following thrust areas for research and innovation.

- Preventive and prophylactic approaches in the health sector
- Diagnostics
- Therapeutics
- Device development

Research Areas: The initial research areas to be focused in the center areas are as follows:

- Stem cell-based therapeutics
- Bioprocess development
- Diagnostics biomarkers identification
- Nano-biotechnology for plant as well as animal systems
- Communicable and Non communicable diseases
- Cancer immunology and immunotherapy
- Virus induced Cancer
- Water Technologies and Water borne diseases
- Prevention of Food Adulteration – Detection, Biomarkers



Activities by KMSCAI 2019

Talks Organized - Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) in coordination with Amity Institute of Biotechnology (AIB) conducted a Distinguished lecture “Biotechnology and Society” by Dr. Sanjay Singh, CEO of Gennova Biopharma, Pune on 25th March 2019 at Amity University Gurugram.



Patents Filed –

1. Prof. Arvind Chhabra (Director KMSCAI), Director Stem Cell Institute filed a patent on “Development of an indigenous apoptosis detection and measurement kit”, an outcome of the Dr. Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) with 201911022094:

Patents Filed:

1. Prof. Arvind Chhabra (Director KMSCAI), Director Stem Cell Institute filed a patent on “An infectious agent/ cells/ biomarker trap system utilizing patient-derived human samples to develop next generation diagnostic kits against infectious diseases and chronic conditions”, an outcome of the Dr. Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) with 202011019784.
Team of Inventors: **Dr. Arvind Chhabra.**
2. Prof. Arvind Chhabra (Director KMSCAI), Director Stem Cell Institute filed a patent on “An Affordable Biodegradable Face-Mask with Anti-Microbial Properties”, an outcome of the Dr. Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) with 202011017740.
Team of Inventors: **Dr. Arvind Chhabra**, Dr. Monika Vats, AUH, and Dr. Shatendra Sharma, JNU.
3. Prof. Arvind Chhabra (Director KMSCAI), Director Stem Cell Institute filed a patent on “Fabric with self-cleaning properties”, an outcome of the Dr. Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) with 201911014025.
Team of Inventors: Dr. Monika Vats, Dr. Chandra Mohan Srivastava, Dr. Jyotsna Sharma (All AUH), Dr. Shatendra K. Sharma (JNU), **Dr. Arvind Chhabra**, AUH.
4. Prof. Arvind Chhabra (Director KMSCAI), Director Stem Cell Institute filed a patent on “A Method of Green Synthesis of Copper Oxide Nanoparticles using Cucumis Sativus (cucumber) Extract and Its Infusion in Cream”, an outcome of the Dr. Kiran Majumdar Shaw Centre for Affordable Innovation (KMSCAI) with 201911014025.
Team of Inventors: **Dr. Arvind Chhabra**, Dr. Monika Vats, Dr. Satish Sardana, AUH.

Affordable Products Developed:

1. **Skin Cream with UV-protective (SPF value 37), anti-microbial and skin rejuvenating properties:** Dr. Arvind Chhabra and team of inventors, including Dr. Monika Vats and Dr. Satish Sardana has developed an affordable, patented skin cream (Indian Patent Application No. 201911014025), infused with nanoparticles synthesized by green synthesis by Green Chemistry, using Cucumber, that can provide protection from UV-rays of sun lights (with Sun Protective Factor (SPF) value of 37), has anti-microbial properties as well as skin rejuvenating properties (Fig. 1).

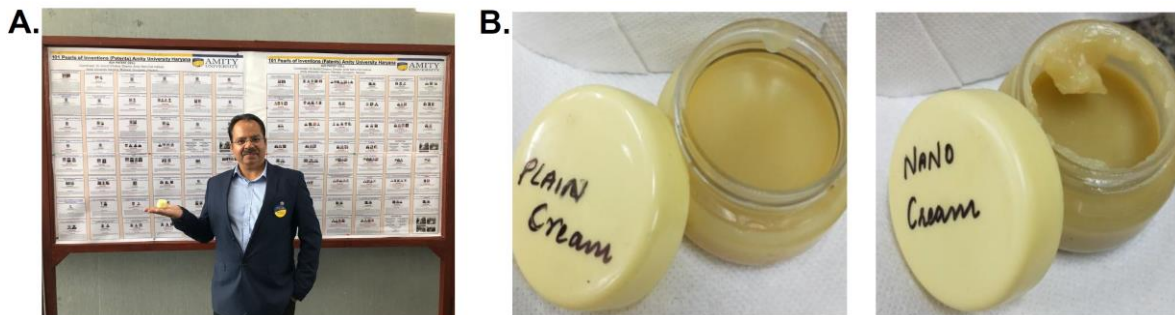


Fig. 1. A UV-protective, anti-microbial skin rejuvenating skin cream.



2. **A three-layered, affordable, reusable, biodegradable, multi-purpose, anti-microbial face mask:** Team of inventors led by **Dr. Arvind Chhabra**, Director KMSCAI and Director Stem Cell Institute, including **Dr. Monika Vats**, AUH, and **Dr. Shatendra Sharma**, JNU, has also developed a three-layered, multi-purpose, affordable, reusable, face-mask, that has inner third layer replaceable (Indian Patent Application 202011017740).

One of the variants of this face mask utilizes a patented Fabric with self-cleaning properties (Indian Patent Application 201911014025), developed by **Dr. Arvind Chhabra** and the team of inventors including **Dr. Monika Vats**, **Dr. Chandra Mohan Srivastava**, **Dr. Jyotsna Sharma** (All AUH), **Dr. Shatendra K. Sharma** (JNU).

The unique feature about this face mask is that by using inserts of anti-microbial nanoparticles coated layer or essential oil infused layer or N95 grade layer, it can be used for different applications. Discussions to license this technology to industry are ongoing.

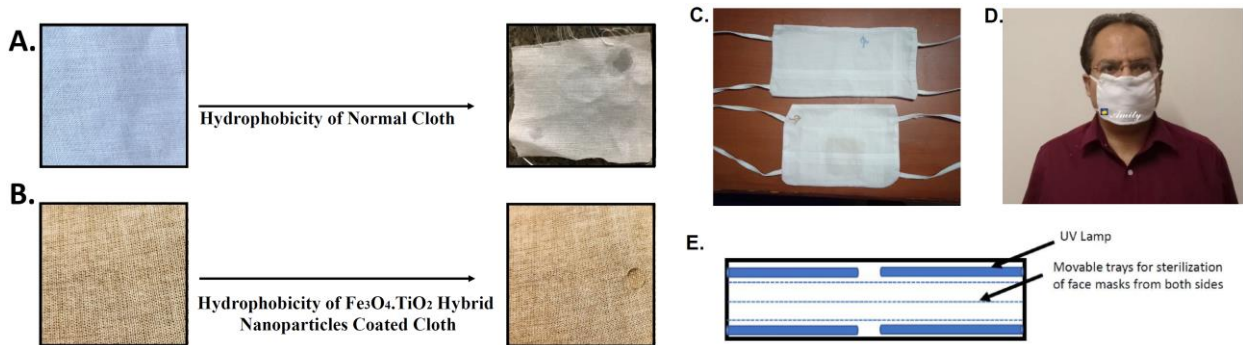



Fig. 2. A three-layered, affordable, reusable, biodegradable, multi-purpose, anti-microbial face mask.

3. **A method for cobalt substituted zinc ferrite assisted photocatalytic degradation of methylene blue:** **Dr. Atul Thakur**, Dir. Amity Institute of Nanotechnology, along with team of inventors including, **Dr. Preeti Thakur**, **Deepika** and **Hon. VC**, AUH, **Prof. PB Sharma**, developed a Cobalt-zinc ferrite nanoparticle composition that can be used as a potential material for purification of water and its degradation efficiency could be increased with increase in cobalt concentration (Indian Patent Application No. 202011018761).
4. **Synthesis and characterization of Yttrium Iron Garnet (YIG) nano-materials as source of clean and green energy:** **Dr. Atul Thakur**, Dir. Amity Institute of Nanotechnology, along with team of inventors including, including **Dr. Preeti Thakur** and **Hon. VC**, AUH, **Prof. PB Sharma** also synthesized Yttrium Iron Garnet (YIG) nano-materials, without any plasma or spray, that can be used as source of clean and green energy (Indian Patent Application No. 202011001179).

- 
5. **A method for pretreated chitosan encapsulated exudate from *Ficus racemosa* and its hepatoprotective effect:** Hon. VC, Prof. P. B. Sharma, along with a team of inventors including, Dr. Saurabh Bhatia, AIU, AUH, (Dr.) Seema R Pathak, ASAS, AUH, Dr Viveak Ballyan, Assoc. Dir. HR, AUH, and Mr. Sandeep Singh, Assistant Manager, AUH, developed a method for pretreated chitosan encapsulated exudate from *Ficus racemosa* and hepatoprotective effect of freeze dried chitosan encapsulated exudate from *Ficus racemosa* (Indian Patent Application No. 201911024115).

Manuscripts Published:

1. Green Synthesis of Copper Oxide Nanoparticles using *Cucumis sativus* (cucumber) Extracts and their Bio-physical and Biochemical Characterization for Cosmetic and Dermatologic Applications. Monika Vats^{1*}, Shruti Bhardwaj¹, Arvind Chhabra^{2*}. Endocrine, Metabolic & Immune Disorders-Drug Targets (EMID-DT) Journal. (Manuscript accepted for publication) (A Scopus Indexed journal, impact factor 1.8).



Invited Talk(s):

1. Dr. Subhash Chauhan

Professor & Inaugural Chair, Department of Immunology

Founding Director, Institute for Cancer Immunotherapy

University of Texas Medical School

The University of Texas Rio Grande Valley

Texas, USA

**Stem Cell Institute, Kiran Mazumdar-Shaw Center for Affordable Innovations, AUH,
& Amity International Society of Natural Products Present**

**EFFECTIVE STRATEGIES TO COMBAT
THE COVID19 PANDEMICS**



Dr. Subhash Chauhan

Professor & Inaugural Chair, Department of Immunology

Founding Director, Institute for Cancer Immunotherapy

University of Texas Medical School

The University of Texas Rio Grande Valley

Webinar Schedule: May, 29th, 5.30-6.30 PM

Registration Link: <http://tinyurl.com/y7gbgq6e>

Moderator: Dr. Arvind Chhabra, Director, Amity Stem Cell Institute (ASCI), AUH
Director, Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI), AUH

Objectives of the Event:

Invited talk was organized by Kiran Mazumdar Shaw Centre for Affordable Innovations (KMSCAI) and Stem Cell Institute by Dr. Subhash Chauhan to provide students, research fellows and faculty of AUH glimpse of recent advance in research related to COVID19 disease mechanism and advances being made towards developing effective therapeutic strategies. It also provided students, research fellows and faculty networking opportunities.



Subhash C. Chauhan, Ph.D.

Professor and Chairman, Department of Microbiology and Immunology

PhD in Reproductive Endocrinology- 1997

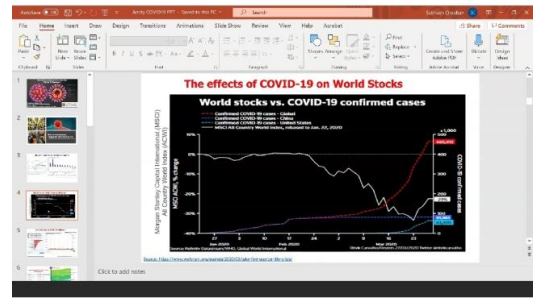
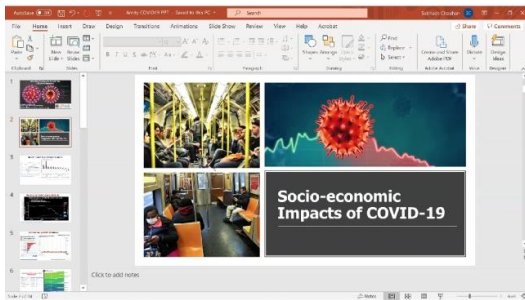
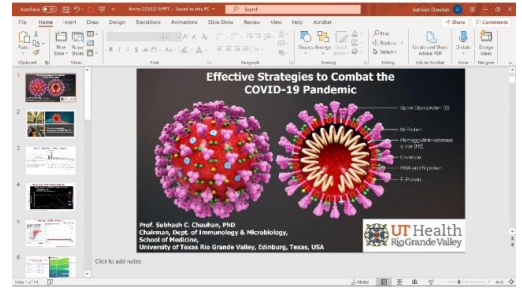
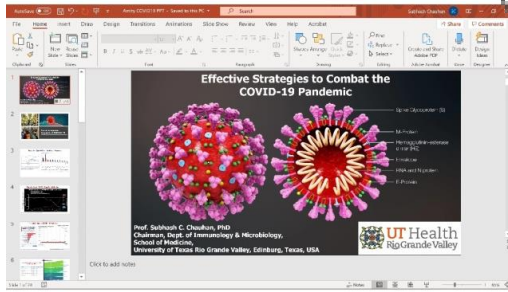


Dr. Chauhan is a tenured Professor in the Microbiology and Immunology Department at the University of Texas Rio Grande Valley (UTRGV), Edinburg, Texas. Dr. Chauhan is also a Founding Director of the South Texas Center of Excellence in Cancer Research (ST-CECR). Dr. Chauhan has received his PhD degree from Central Drug Research Institute (CDRI), Lucknow, India and completed postdoctoral training in cancer biology from University of Nebraska Medical Center (UNMC), Omaha, Nebraska. Dr. Chauhan joined first faculty position in 2006, at Cancer Biology Research Center, Sanford Research/USD, Sioux Falls, SD and later joined his current position in 2013. Dr. Chauhan published over 120 peer reviewed manuscripts and book chapters along with several patents related to drug delivery systems, nanoparticle formulations and antibodies. Primary research interest of Dr. Chauhan's lab is to identify and characterize diagnostic and therapeutic targets for cancer to develop newer tools for early disease diagnosis and next generation anti-cancer agents. Dr. Chauhan's work has resulted in publication of high impact research articles and attracted significant extramural funding from NIH, DOD, Private Foundations and drug Industry. Dr. Chauhan's research group includes a team of basic scientists, physician scientists, clinicians and biostatisticians. Dr Chauhan is actively involved in the peer review process of manuscripts for numerous journals, NIH study sections, multiple external funding agencies and training of junior faculties and graduate students.

Research Interests

Primary research interest of Dr. Chauhan's lab is to identify and characterize the diagnostic and therapeutic targets for cancer. This research is aimed for the identification and characterization of biomarkers that aberrantly express or localize in cancer cells to develop newer tools for early disease diagnosis. We are utilizing genomics and proteomics approach for identification of novel early diagnostic markers. Recently we have identified a novel trans-membrane mucin MUC13 which is highly over-expressed ovarian and pancreatic and colon cancers. This may be potential biomarker for early cancer diagnosis as well as a good target for antibody guided targeted therapy. Nonspecific distribution and suboptimal delivery of the anti-cancer drug(s) to the tumor cells are the major hindrances in the successful use of traditional chemotherapy. Dr. Chauhan's lab is developing novel targeted therapeutic modalities for the treatment and diagnosis of cancers. Cancer tissues overexpress certain cancer associated antigens, and antibodies against these antigens will potentially recognize cancer cells. These antibodies can be used to deliver the *radionuclides and nanoparticles-encapsulated drugs* specifically to the tumors. My research group includes an outstanding team of basic scientists, physician scientists, clinicians and biostatisticians. Our teamwork has resulted in publication of high impact research articles and significant extramural funding (5 NIH RO1, 2 DOD and 1 Private Foundation, 1 Industry grants). Research work from our lab has been presented at National and International symposiums/conferences. I have been actively involved in the peer review process of manuscripts for numerous journals, NIH study sections, multiple external funding agencies, training of junior faculties and graduate students.

Glimpses of the Event:



2. **Dr. Arvind Chhabra**
Professor & Director
Stem Cell Institute
Member, Patent Cell and Coordinator
Amity University Gurugram
Haryana, India



**AUH Patent Cell, Amity Stem Cell Institute (ASCI) And Kiran Mazumdar-Shaw Center
for Affordable Innovations (KMSCAI) , AUH, Present**

INTELLECTUAL PROPERTY AND INTELLECTUAL PROPERTY RIGHTS: BASIC PRINCIPLES AND PROCESSES



Dr. Arvind Chhabra

Professor & Director, Stem Cell Institute
Member, Patent Cell & Coordinator, IPR Activities
Amity University Haryana
Manesar, Gurugram, Haryana, India-122413

Webinar Schedule: 23rd Sep, 2020, 11.00AM-1.00 PM

Zoom Meeting ID: 752 3658 1601; **Passcode:** NYW4N1

Registration Link: <https://us04web.zoom.us/j/75236581601?pwd=dkpCYklrcFYwT2dKZ1ZlMjBZWU9UT09>

Objectives of the Event:

Invited talk was organized by Kiran Mazumdar Shaw Centre for Affordable Innovations (KMSCAI) and Stem Cell Institute by Dr. Arvind Chhabra to educate students, research fellows and faculty of AUH about intellectual property (IP) and intellectual property rights (IPR), requirements and processes of filing successful IP application, and career opportunities in IPR field.



Biography: Arvind Chhabra

Dr. Chhabra did his Masters in Biotechnology from Guru Nanak Dev University, Amritsar, in 1995, and PhD in Biotechnology from Central Drug Research Institute (CDRI), Lucknow, in 2001. After completing his PhD degree, Dr. Chhabra joined University of Connecticut Health Center (UHC), Farmington, Connecticut, as a post doctoral fellow, in 2002. Dr. Chhabra served as an Assistant Professor of Medicine in the Department of Medicine from 2008-2017, and in the Stem Cell Institute from 2010-2017, at the UHC. In June 2018 Dr. Chhabra joined Amity University Haryana (AUH) as Professor & Director of the Stem Cell Institute.

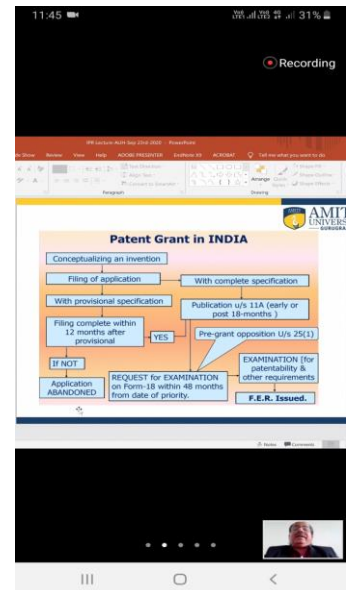
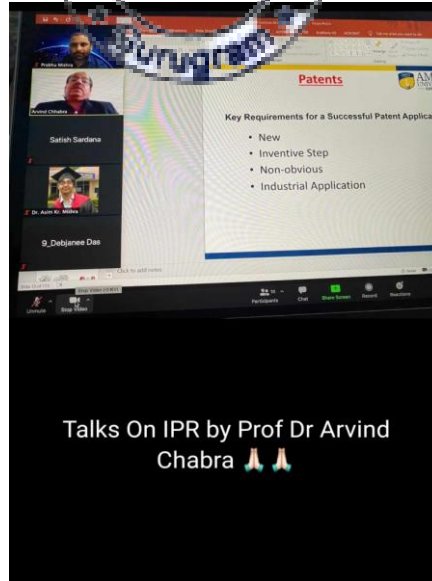
Dr. Chhabra has cross-disciplinary research expertise in the fields of human cancer immunology and immunotherapy, human pluripotent stem cell (hPSC) research, and molecular microbiology. His work on human cancer immunology and immunotherapy is aimed at developing an effective cancer immunotherapy approach, utilizing active-specific immunization as well as T cell receptor (TCR)-engineered anti-tumor T cell-based adoptive transfer-based approaches. His work on hPSC involves generation of donor-specific induced pluripotent stem cell (iPSC) lines and utilization of these iPSC lines to generate functional immune effectors, such as effector T cells and antigen presenting cells (APC).

Among Dr. Chhabra's notable research contributions in the field of human cancer immunology and immunotherapy include, creation of donor-specific MHC class I restricted anti-tumor T cells by engineering human peripheral blood-derived T cells with a melanoma patient's CD8+ CTL-derived MHC class I restricted transgenic T cell receptor (TCR). Dr. Chhabra has also identified a cell intrinsic, caspase-independent, mitochondria-centric cell death pathway involved in activation induced cell death (AICD) of human primary anti-tumor T cells, with an objective to generate anti-tumor T cells that will withstand premature AICD to sustain longer in the physiology and produce better clinical outcomes. Among his noteworthy contributions in the field of human pluripotent stem cell research include generation of iPSC lines from peripheral blood-derived dendritic cells (DC) of young and elderly individuals, utilizing non-integrating viral vector-based approaches. Dr. Chhabra has also developed methods to differentiate human iPSC lines into hematopoietic stem cell (HSC) precursors and functional APC. Given that the host immune system declines with age, quality as well quantitatively, iPSC-derived naïve immune effectors have significant translational implications towards developing personalized cancer immunotherapy approaches. Given that the market size of cancer immunotherapy is projected to be 20 billion USD per year by 2022, Dr. Chhabra's research has significant translational as well as business prospects.

Dr. Chhabra has published more than thirty manuscripts in prominent international peer-review journals. His research work has been widely cited and has earned him awards and accolades at international platforms, including Overseas Fellow of Royal Society of Medicine membership. Dr. Chhabra's research was supported by several research grants, including three independent grants on which he served as the Principal Investigator, with a total funding amount of \$925,000. Dr. Chhabra, also serves as an Editor/Editorial Board Member for several prominent research journals, including Scientific Reports, Onco-Targets & Therapy and Stem Cell Discovery Journal. In addition, he also serves as a peer-reviewer for several reputed international research journals, including Journal of Immunology, Journal of Leukocyte Biology, Vaccine and Expert Opinion on Therapeutic Targets. At the Amity Stem Cell Institute, Dr. Chhabra is building an educational as well as cutting edge research program in Molecular Medicine and Stem Cell Technology (MMSCT). In addition, he is also serving as member and coordinator of AUH Patent Cell.



Glimpses of Event:



Attendance:

	Arvind Chhabra			
	9_Debjane Das			
	Avantika Tripathi			
	Greesham Tripathi			
	KEERTI SHARMA			
	KRITIKA SINGH			
	Manoj Kashyap			
	Prabhu Mishra			



3. Dr. Manish Tripathi

Assistant Professor
Department of Immunology & Microbiology
University of Texas Rio Grande Valley
McAllen, Texas, USA

Amity Stem Cell Institute (ASCI) And Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI), AUH, Present

LONG-NONCODING RNAs IN HUMAN HEALTH AND DISEASE DEVELOPMENT



Dr. Manish Tripathi

Assistant Professor
Department of Immunology & Microbiology
University of Texas Rio Grande Valley
McAllen, Texas, USA-78504

Webinar Schedule: 25th Sep, 2020, 9.30-10.30 AM

Zoom Meeting ID: 744 8017 2035; Passcode: 7ig5Bd

Registration Link: <https://us04web.zoom.us/j/74480172035?pwd=QkRNandGTXUxbS9sSIROa1ZZNGx5Zz09>

Moderator: Dr. Arvind Chhabra, Director, ASCI, AUH; Director, KMSCAI, AUH

Objectives of the Event:

Invited talk was organized by Kiran Mazumdar Shaw Centre for Affordable Innovations (KMSCAI) and Stem Cell Institute by Dr. Manish Tripathi to provide students, research fellows and faculty of AUH glimpse of recent advance in long-noncoding RNA research and their application if cancer research. It also provided students, research fellows and faculty networking opportunities.





Brief Biography: Dr. Manoj Tripathi



Dr. Tripathi is an Assistant Professor at Department of Immunology and Microbiology at University of Texas Rio Grande Valley (UTRGV). He is a member of South Texas Center of Excellence in Cancer Research (STCECR), and Vice Chair Medical Student Promotion and Evaluation committee (MSEPC). He directs an active research laboratory. His research projects are supported by NIH R01 grant, several intramural funding and currently by School of Medicine at UTRGV. He is listed as PI and co-PI on recently submitted proposals to NIH and other Foundation grants. He is expert in transcriptional regulation of the genes associated with EMT, metastasis, cancer progression and T cell activation. The long-term goal of his research program is to identify new early diagnosis/prognosis biomarkers and understand the regulation of genes (protein coding and non-protein coding) responsible for cancer progression and metastasis. He has presented his research work at several conferences, including American Association for Cancer Research (AACR), American Society for Biochemistry and Molecular Biology (ASBMB), Digestive Disease Workshop (DDW) and received various accolades and awards, peer-reviewed (as a reviewer) manuscripts for multiple cancer research/biochemical journals. Dr. Tripathi has authored and co-authored publications in *Nature*, *Journal of Clinical Investigation*, *Structure*, *Molecular and Cellular Biology*, *Journal of Biological Chemistry*, *Cancer Research*, *Molecular Cancer Research* etc., which are well cited. In his seminal publication in *Nature*, was able to show using CryoEM, that DNA physically loops with an activator protein during transcription initiation. He was first to report breast cancer susceptibility gene BRCA2 is regulated by transcriptional silencer protein Slug. Dr. Tripathi, after completing doctoral studies from Central Drug Research Institute, India, joined Meharry Medical College and then Vanderbilt University Medical Center at Nashville, TN, USA, for his post-doctoral training. Dr. Tripathi has worked with experts in the field such as Dr. Tony Weil (transcription regulation), Dr. Dan Beauchamp (EMT & metastasis) and Dr. Albert Reynolds (cell signaling and adhesion). Dr. Tripathi joined UTRGV School of Medicine in 2019 and has initiated studies on the role of long noncoding RNA on cancer progression and metastasis. Recently, Dr. Tripathi has identified long noncoding RNA MALAT1 to be NFATc1 regulated which is modulated by stress factors. Dr. Tripathi's lab uses different cutting-edge techniques (Digital Droplet, CRISPR based gene editing, Gene delivery via lentiviral system, *In vivo* animal imaging) to study long noncoding RNA regulation. Dr. Tripathi's long term goal is to design appropriate therapeutic and preventive strategies to reduce cancer related mortality and health disparity. He has also taught many courses to PharmD and PhD students at Meharry Medical College, Nashville, TN, University of Tennessee Health Science Center Memphis, and is teaching at School of Medicine, UTRGV. He has trained many graduate and undergraduate students during his research career.

4. Dr. Ranjana Srivastava

Founder & Director
Nexttec Lifesciences
Former Deputy Director & HOD Microbiology
Central Drug Research Institute (CDRI)
Lucknow, UP, India



Amity Stem Cell Institute (ASCI And Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI) , AUH, Present

JOURNEY FROM CUTTING EDGE SCIENCE TO ENTREPRENEURSHIP: KEY TAKEAWAYS



**AMITY
UNIVERSITY
GURUGRAM**



Dr. Ranjana Srivastava

Founder & Director, Nextec Lifesciences
Former Deputy Director & HOD, Microbiology
Central Drug Research Institute, Lucknow, UP, India

Webinar Schedule: 25thSep, 2020, 10.30-11.30 AM

Zoom Meeting ID: 744 8017 2035; Passcode: 7ig5Bd

Registration Link: <https://us04web.zoom.us/j/74480172035?pwd=QkRNandGTXUxbS9sSIROa1ZZNGx5Zz09>

Moderator: Dr. Arvind Chhabra, Director, ASCI, AUH; Director, KMSCAI, AUH

Objectives of the Event:

Invited talk was organized by Kiran Mazumdar Shaw Centre for Affordable Innovations (KMSCAI) and Stem Cell Institute by Dr. Ranjana Srivastava to shared with students, research fellows and faculty of AUH her journey from being a cutting-edge scientist to enterprenuer. It also provided students, research fellows and faculty networking opportunities.

Attendance:



9:35 30%

Close **Participants (13)**

Search

- SY Sandeep Yadav (me) [Microphone off] [Video off]
- Manish Tripathi (host) [Microphone on] [Video off]
- Arvind Chhabra [Microphone on] [Video off]
- 9D 9_Debjane Das [Microphone off] [Video off]
- AT Avantika Tripathi [Microphone off] [Video off]
- GT Greesham Tripathi [Microphone off] [Video off]
- KS KEERTI SHARMA [Microphone off] [Video off]
- KS KRITIKA SINGH [Microphone off] [Video off]
- MK Manoj Kashyap [Microphone off] [Video off]
- Prabhu Mishra [Microphone off] [Video off]
- RS Ranjana Srivastava [Microphone off] [Video off]
- R Rati [Microphone off] [Video off]

Invite

III O <

5. **Dr. Soumen Chakraborty**
Scientist-F
Institute of life Sciences
Bhubaneswar, Odisha



&
Adjunct Associate Professor
Regional Centre for Biotechnology
Faridabad, Haryana

**Invited Guest Lecture: Amity Stem Cell Institute (ASCI) &
Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI)**



AMITY
UNIVERSITY
GURUGRAM

STEM CELLS AND CANCER STEM CELLS: NEXT FRONTIERS OF MOLECULAR THERAPEUTICS



Dr. Soumen Chakraborty

Scientist - F

Institute of Life Sciences

Bhubaneswar, Odisha

Webinar Schedule: November 27th, 2020, 10.30am-11.30 am

Webinar Platform: MSTeams

Host: Dr. Arvind Chhabra, Director, ASCI, AUH; Director, KMSCAI, AUH

Objectives of the Event:

Invited talk was organized by Kiran Mazumdar Shaw Centre for Affordable Innovations (KMSCAI) and Stem Cell Institute by Dr. Soumen Chakraborty to provide students, research fellows and faculty of AUH glimpse of recent advance in cancer stem cell research. It provided students, research fellows and faculty networking opportunities.



Brief CV: Soumen Chakraborty

Name Soumen Chakraborty
Present position 1. Scientist-F, Institute of Life Sciences
2. Adjunct Associate Professor: Regional Centre for Biotechnology, Faridabad
Information about Masters Masters in Marine Sciences from Calcutta University, India. 1993 66.2% Ist class
Information about PhD PhD in Science (microbiology) from Jadavpur University, India. 1996-2001
Thesis title: Molecular ecology of toxigenic *Vibrio cholerae*.
Thesis supervisor: Dr. G. Balakrish Nair.

Post doctoral experience:

Institute name	Position	Period
Loyola University Medical Center	Research Associate	Jan, 2000 to April, 2001
University of Illinois at Chicago	Research Associate	May, 2001 to June, 2002
University of Illinois at Chicago	Instructor	June, 2002 to June, 2003
University of Illinois at Chicago	Research Assistant Professor	June, 2003 to Jan, 2005

Job experience:

Institute name	Position	Period
Institute of Life Sciences	Lecturer- Scientist-B	Feb, 2005 to May, 2007
Institute of Life Sciences	Scientist-C	June, 2007 to May, 2011
Institute of Life Sciences	Scientist-D	June, 2011 to June, 2015
Institute of Life Sciences	Scientist-E	July, 2015 to June 2020
Institute of Life Sciences	Scientist-F	July, 2020 to till date

Research interest:

1. Role of miRNA/mRNA and its network in leukemic stem cells
2. RNA-binding proteins in leukemia.
3. Post-translational modification of EVI1 and its role in leukemogenesis/oncogenesis/hematopoietic stem cells

Publications:

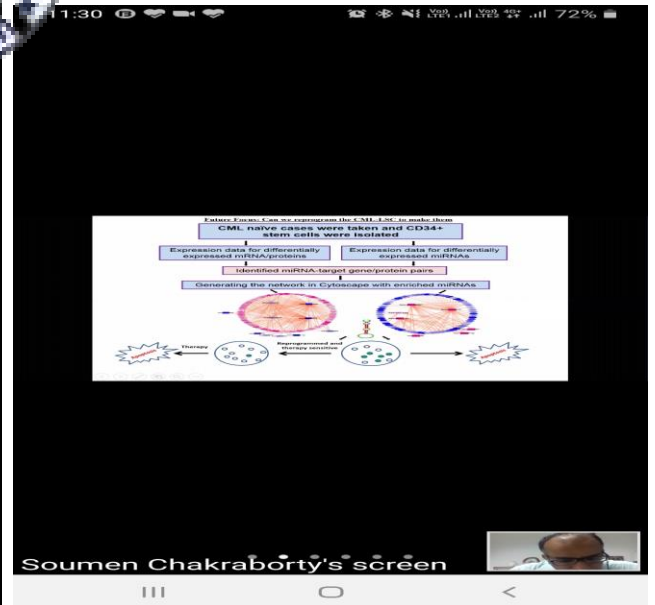
During Ph.D: 15
During Post-Doc: 9
As an independent faculty: 19

Research Projects/Grants:

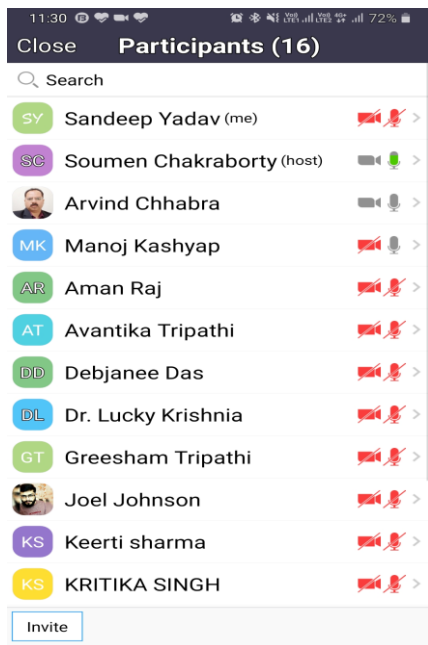
Total of 7 from various funding agencies.



Photographs of the event:



Attendance:





Report on Study Abroad Program

To provide global exposure to all its students and faculty members, Amity University has designed Study Abroad Program (SAP) its foreign campuses and in collaboration with premier foreign institutions across the globe. SAP is offered thrice in a year, odd semester, even semester and summer term, at six beautiful locations across the globe, i.e. Singapore, London, New York, Dubai, France and Australia. (Refer Annexure-1, SAP Brochure).

The rigorous programs integrate internationalization dimension to their learning as the platform provides an opportunity to learn the best global practices by working on extensive global projects, interacting with top academicians and top corporate leaders and by visiting premier universities and leading industrial setups and places of heritage and cultural importance.

Under the program, previously students have visited many prestigious universities, including Harvard University, USA, National University of Singapore, Singapore, Queens Mary University, St. Lucia Campus, Australia, Oxford University, UK and many other top ranked universities across the globe. Students had also an opportunity to visit leading industrial setups as well, including but not limited to, The Water (Water packaging plant), Tiger Brewery, Quadbury World, Ferrari World, Jaguar Automobiles, Walmart, etc. and to top organizations/institutions, such as, White House and UN Headquarters. Students were also taken on the fun excursions to Night Safari, Universal Studios, Roaman Bathroom, ZSL London Zoo, London Bridge Global Village, Desert Safari and Burj Khalifa among various other excursions.

SAP is a credit transfer based certificate program which provides flexibility to students to complete certain credits with foreign institution and take the advantage of international education while pursuing their ongoing academic program. It provide an edge to participants over their peers to add global component to their degree, enhancing their employability and holistic learning.

- **Unique and Innovative steps undertaken by the OIA to increase the SAP Participation:**

- i.Awareness about the Study Abroad Program:**

- Faculty Development Program was organized on “Importance of Internationalization in Higher Education”
 - Student Seminars on Study Abroad
 - Counseling Desks established
 - Classroom Presentations & Marketing Collateral

- ii.Role of Institutions/HoIs/Faculty members**

- Higher Involvement, Presentations by HOIs
 - Internationalization Coordinators identified in each institution



- **Number of Students Participated in SAP at AUH**
Office of International Affairs has been continuously doing its endeavors to increase the participation in the SAP. Since its inception at AUH with two students, SAP has been evolved and witnessed more than 160 proud alumni.

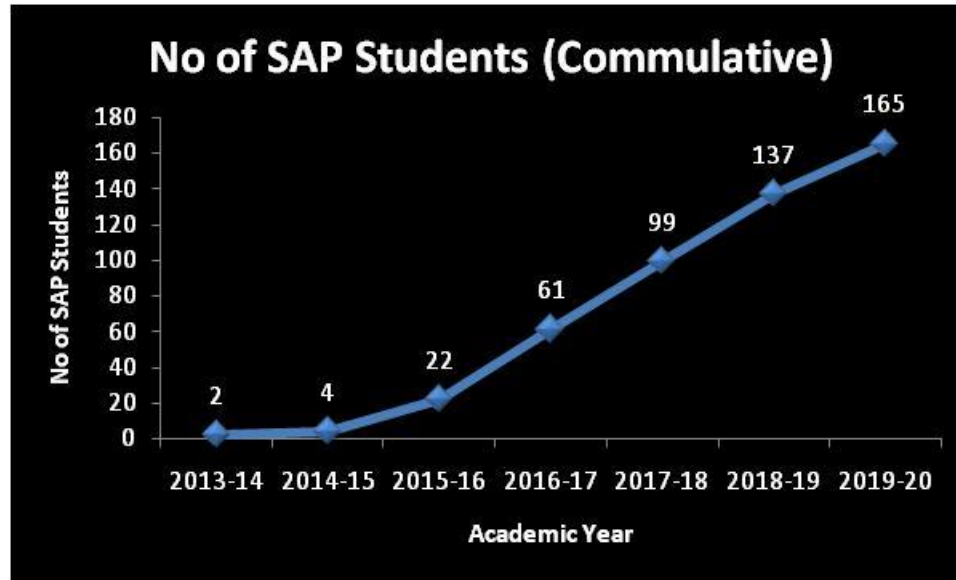


Figure 1: Progression of SAP Alumni since inception of SAP at AUH

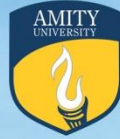
Annexure-1 SAP Brochure

Annexure-2 List of Students attended the program is mentioned

Annexure-3 Glimpses



REGISTRATIONS OPEN
ON FIRST COME FIRST SERVE BASIS*



AMITY
UNIVERSITY
GURUGRAM

**STUDY AT AMITY.
GIVE YOUR CAREER A GLOBAL EDGE.**

STUDY ABROAD PROGRAMME

AT AMITY CAMPUSES
IN NEW YORK, AUSTRALIA,
SINGAPORE, LONDON & DUBAI



NEW YORK



AMITY UNIVERSITY (IN) LONDON



AMITY SINGAPORE



AMITY UNIVERSITY DUBAI

BENEFITS OF STUDY ABROAD PROGRAMME

- Global experiential learning environment and platform
- Familiarization with the global industry dynamics and international economic trends
- Special sessions delivered by the Industry experts and leading foreign faculty
- Various Industry visits and extensive project reports focusing on global aspects
- Building network with International faculty and students
- Sightseeing and visits to other reputed Universities and organizations

*Limited Seats





STUDENTS' TESTIMONIALS



A big thanks to Amity for connecting me to Harvard through Study Abroad Program. The Study Abroad Program organized by Amity University has given me new wings and boosted my self-confidence. Through SAP, I have had the golden opportunity to learn and study at Harvard. All the conferences and all the delegates who interacted have given me a new vision to see myself to be a strong headed woman in future. After participating in SAP USA, I have made my own slogan in life- "you change the world by your example not by your opinion."

Dapinder Kaur
M.Sc. (Clinical Psychology)
1st Semester



The Study Abroad Programme of Amity has changed my life. Now I am more interactive and have more confidence. I have gained international experience in my life and have enhanced my skillset through SAP. I am a change person and have clear vision of goals in my life.

Unique Narang
MBA (General)
3rd Semester



Studying abroad adds another level to my college experience. Experiencing other cultures around the world has broadened my knowledge base and taught me to think and live differently. It is so important, today, to have a solid understanding of different cultures, and I think SAP is an easy way to set up our generation to be a more globally-minded society."

Billion Sandhu
B.Sc.-Biotech



My SAP experience was very good. All the facilities provided were nice. We had tours to different universities and educational bodies which was really helpful. I recommend every student to participate in Study Abroad Programme.

Anurag Dhankar
B.Tech.-CSE
7th Semester



It was a great and memorable learning experience. This Programme turned out to be the best I've had till date. Study Abroad Programme help the students to explore the new land and help in making new friends and every student should grab this opportunity.

Ashish Kumar
BHMCT
6th Semester, (ASH)



The Study Abroad Programme to Singapore has brought various positive changes in my life. Living in a different country with culturally different people has helped me to become a better person, on a personal as well as social level. I've not just gained knowledge through SAP, but I've also learnt how to apply it.

Muskaan Makkar
B.Sc. - Clinical Psychology
4th Semester

AMITY STUDENTS AT OVERSEAS LOCATIONS DURING STUDY ABROAD PROGRAMME



Contact: Office of International Affairs, B-06, Ground Floor, Academic Block-B
Call: 99-992-51532, 93-199-1007



Annexure- List of Students Participated in SAP

S. No.	Name	SAP Location	Semester	Program	UG / PG	School	Cycle	Session
Even 2014								
1	Punya Sharma	Singapore	6	B.com(H)	UG	ACC	February-14	2013-14
2	Ananya Dhull	Singapore	6	B.com(H)	UG	ACC	February-14	2013-14
Odd 2014								
3	VanshVashistha	Singapore	5	BBA	UG	ABS	October-14	2014-15
Even 2015								
4	AkshayDeewan	Dubai	4	B.Sc. ID	UG	AID	March-15	2014-15
Odd 2015								
5	Surbhi Rana	Australia	1	PGD Counseling Psychology	PG	AIBAS	November-15	2015-16
6	Bhavya Kapoor	Australia	1	MSc in Clinical Psychology	PG	AIBAS	November-15	2015-16
7	Hemant Malik	Australia	3	BBA	UG	ABS	November-15	2015-16
8	Yashasvi Sharma	Australia	3	BBA	UG	ABS	November-15	2015-16
9	Smriti Bangia	London	3	MBA	PG	ABS	November-15	2015-16
10	Priya Rajput	London	3	MBA	PG	ABS	November-15	2015-16



11	MulambaBadibanga Oliver	London	5	BBA	UG	ASET	November-15	2015-16
12	Nikesh	Singapore	5	BBA	UG	ABS	November-15	2015-16
13	Rajesh	Singapore	5	BBA	UG	ABS	November-15	2015-16
14	Rahul Sharma	Singapore	3	MBA	PG	ABS	November-15	2015-16
15	Rakesh	Singapore	3	MBA	PG	ABS	November-15	2015-16
Even 2016								
16	Anisha Agarwal	Dubai	6	BBA	UG	ALS	March-16	2015-16
17	Ayush Srivastava	Dubai	2	BBA(L.L.B)	UG	ALS	March-16	2015-16
18	Astha Rana	Australia	4	B.Sc.(IT)	UG	AIIT	March-16	2015-16
19	Ashish Sharma	Australia	2	BBA	UG	ABS	March-16	2015-16
20	Aditya Pratap Singh	London	2	MA(J&MC)	PG	ASCO	May-16	2015-16
21	Anirudh Aggarwal	London	2	PGD(J&MC)	PG	ASCO	May-16	2015-16
22	Kanishk Chauhan	London	2	BSc(A&VG)	UG	ASCO	May-16	2015-16
Even 2016								
23	Swastik Prasad	USA	1	BBA	UG	ABS	November-16	2016-17
24	Mohit Prasad	USA	3	MBA	PG	ABS	November-16	2016-17



25	AyushMudgal	USA	3	B.Sc. Psychology	UG	AIBAS	November-16	2016-17
26	AnkitaKhairari	USA	3	B.Sc. Psychology	UG	AIBAS	November-16	2016-17
27	Priyanka Kema	USA	3	B.Sc. Clinical Psychology	UG	AIBAS	November-16	2016-17
28	Drishti Manchandani	USA	3	B.A. Applied Psychology	UG	AIBAS	November-16	2016-17
29	Shreyansh Singh	USA	3	B.Sc. Clinical Psychology	UG	AIBAS	November-16	2016-17
30	Surbhi Rana	USA	3	M.A. Counselling Psychology	PG	AIBAS	November-16	2016-17
31	ShriyaVashisht	USA	1	M.Sc Clinical Psychology	PG	AIBAS	November-16	2016-17
32	PreetiSisodia	USA	3	M.A. Counselling Psychology	PG	AIBAS	November-16	2016-17
33	Aziz Pratap Singh	USA	7	BBA- LLB	UG	ALS	November-16	2016-17
34	Harshit Gera	USA	7	BBA- LLB	UG	ALS	November-16	2016-17
35	Shiva Tokas	USA	7	BBA- LLB	UG	ALS	November-16	2016-17
36	HimanshuShokeen	USA	7	BBA- LLB	UG	ALS	November-16	2016-17
37	Ankit Choudhry	USA	7	BBA- LLB	UG	ALS	November-16	2016-17
38	MayankGautam	USA	7	BBA- LLB	UG	ALS	November-16	2016-17
39	Smiti Aggarwal	USA	7	BBA- LLB	UG	ALS	November-16	2016-17



40	RajatSejwal	USA	7	BBA -LLB	UG	ALS	November-16	2016-17
41	Ayush Srivastava	USA	2	BBA -LLB	UG	ALS	November-16	2016-17
42	HimanshuKataria	USA	3	BBA -LLB	UG	ALS	November-16	2016-17
43	LakshayDagar	USA	5	BBA -LLB	UG	ALS	November-16	2016-17
44	Nihal Singh	USA	3	BBA -LLB	UG	ALS	November-16	2016-17
45	Rajan Saini	USA	3	BBA -LLB	UG	ALS	November-16	2016-17
46	Chaarur Malik	USA	3	B. Designing	UG	ASFFDT	November-16	2016-17
47	Prarthna Sharma	USA	5	B.Sc. FDT	UG	ASFFDT	November-16	2016-17
48	AnshuLamba	USA	3	M.A. English	PG	ASLA	November-16	2016-17
49	SrishtiUpmanyu	USA	3	M.A. English	PG	ASLA	November-16	2016-17
50	Jyotsana Khanna	USA	3	M.A. English	PG	ASLA	November-16	2016-17
51	Anupriya Yadav	USA	3	BA English (H)	UG	ASLA	November-16	2016-17
52	Pujari Ashish Chakraborty	USA	1	B.Arch	UG	ASPA	November-16	2016-17
53	TusharBudhiraja	USA	3	B.Com(H)	UG	ACC	November-16	2016-17
54	Mayur Grover	USA	1	B.Com(H)	UG	ACC	November-16	2016-17

Even 2017



55	Shreyya Rachel	USA		MBA- H care and management	PG	ABS	March-17	2016-17
56	PulkitKhandelwal	Australia	4	MBA-IB	PG	ABS	March-17	2016-17
57	Jasdeep Walia	Australia	2	BA Applied Psychology	UG	AIBAS	March-17	2016-17
58	Sidharth Yadav	Australia	2	B.Com (H)	UG	ACC	March-17	2016-17
Summer 2017								
59	AnkurLamba	Dubai	6	BBA	UG	ABS	May-17	2016-17
60	Amit Kumar Yadav	Dubai	6	BBA	UG	ABS	May-17	2016-17
61	Varun Yadav	Dubai	6	BBA	UG	ABS	May-17	2016-17
62	Amar Kasaudhan	Dubai	6	BBA	UG	ABS	May-17	2017-18
Odd 2017								
63	Dyotima	USA	3	M.Sc. BioChemistry	PG	ASAS	November-17	2017-18
64	Dapinder Kaur	USA	1	M.Sc. Clinical Psychology	PG	AIBAS	November-17	2017-18
65	Chhavi	USA	5	B.A. (H) English	UG	ASLA	November-17	2017-18
66	Ningombam Mongyamba	USA	1	BBA (General)	UG	ABS	November-17	2017-18
67	Rahul Singh	USA	5	B.A. (H) English	UG	ASLA	November-17	2017-18
68	Chaitanya Krishna Bakharedia	USA	9	BBA (LLB) Hons.	UG	ALS	November-17	2017-18



69	Aditya Ghadge	USA	9	B.Com (H)	UG	ALS	November-17	2017-18
70	Satwik Singh	USA	5	B.Sc Clinical Psychology	UG	AIBAS	November-17	2017-18
71	Rajat Sharma	USA	9	B.A. LLB	UG	ALS	November-17	2017-18
72	Anurag Dhankhar	USA	7	B. Tech. (CSE)	UG	ASET	November-17	2017-18
73	Anisha Agarwal	Singapore	3	MBA General	PG	ABS	November-17	2017-18
74	Akanksha Patra	Singapore	3	B. Sc Clinical Psychology	UG	AIBAS	November-17	2017-18
75	Oviya Ilangovan	Singapore	3	B. Sc Clinical Psychology	UG	AIBAS	November-17	2017-18
76	Poonam Yadav	Singapore	3	BSC. A&VG	UG	ASCO	November-17	2017-18
77	Deergha Jaiswal	Singapore	3	BSC. A&VG	UG	ASCO	November-17	2017-18
78	Shivangee RAI	Singapore	5	BBA (General)	UG	ABS	November-17	2017-18
79	Varun Ahluwaila	Singapore	5	BBA (General)	UG	ABS	November-17	2017-18
80	Arjun Arora	Singapore	5	BBA (General)	UG	ABS	November-17	2017-18
81	Unique Narang	Singapore	3	MBA General	PG	ABS	November-17	2017-18
82	Vicky Choudhary	Dubai	5	BBA (General)	UG	ABS	November-17	2017-18
83	Anil	Dubai	5	BBA (General)	UG	ABS	November-17	2017-18
84	Gaurav Yadav	Dubai	5	BBA (General)	UG	ABS	November-17	2017-18



85	Vikash Saharan	Dubai	5	BBA (General)	UG	ABS	November-17	2017-18
86	Ankit Yadav	Dubai	5	BBA (General)	UG	ABS	November-17	2017-18
Even 2018								
87	Ayush Srivastava	USA	6	BBA-LLB(H)	UG	ALS	March-18	2017-18
88	Ramanjeet Kaur Chahal	London	2	M. Com.	PG	ACC	March-18	2017-18
89	Nikita Gaba	Singapore	4	B. Sc. Clinical Psychology	UG	AIBAS	March-18	2017-18
90	Muskaan Makkar	Singapore	4	B.Sc. Clinical Psychology	UG	AIBAS	March-18	2017-18
91	Ashish Kumar	Singapore	6	BHMCT	UG	ASH	March-18	2017-18
92	Kaku Hiranya Shama	London	4	BBA-3C	UG	ABS	March-18	2017-18
93	Anmol Sharma	London	8	B.Tech Biomedical Engineering	UG	ASET	March-18	2017-18
94	Rajat Gaur	Singapore	4	MBA - General	PG	ABS	March-18	2017-18
95	Hanumant Saharan	Singapore	4	B.A English Honours	UG	ASLA	March-18	2017-18
96	Billion Sandhu	Singapore	6	Bsc. Hons Biotechnology	UG	AIB	March-18	2017-18
Summer 2018								
97	Anmol Alawadhi	Singapore	2	M. Tech (AIR)	PG	ASET	May-18	2017-18
98	Akriti Madan	Dubai	2	B.Sc Clinical Psychology	UG	AIBAS	May-18	2017-18



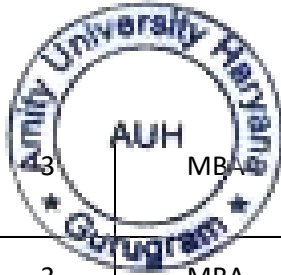
99	Varundev Singh Kotwal	Dubai		BBA	UG	ABS	May-18	2017-18
100	Divyanshu Sharma	USA	1	M. Sc. Clinical Psychology	PG	AIBAS	November-18	2018-19
101	Misha Sharma	USA	1	M. Sc. Clinical Psychology	PG	AIBAS	November-18	2018-19
102	Sumit Sharma	France	3	B. Com. (Hons.)	UG	ACC	November-18	2018-19
103	Drishti Tyagi	USA	9	BTech CSE+MBA	UG	ASET	November-18	2018-19
104	Kapil Singla	France	5	BBA (General)	UG	ABS	November-18	2018-19
105	Sumati Kalani	Australia	1	M.Sc. Dietetics and applied nutrition	PG	AMS	November-18	2018-19
106	Muhammad Zabih Naveed	Australia	3	M.Tech Structural Engineering	PG	ASET	November-18	2018-19
107	Gunjeeta	UK	1	B.Sc Clinical Psychology	UG	AIBAS	November-18	2018-19
108	Priya Saini	UK	1	B.A. Spanish Honours	UG	ASL	November-18	2018-19
109	Souvik Mahato	Singapore	3	B.Sc Earth Sciences	UG	ASEES	November-18	2018-19
110	Ankita Mittal	Singapore	3	B. Sc. (Dietetics & Applied Nutrition)	UG	AMS	November-18	2018-19
111	Muskan Godara	Singapore	1	Bsc.(H) Biological Sciences	UG	AIB	November-18	2018-19



11 2	Bhumi Singh	Singapore	5	B.A. English Honours	UG	ASLA	November-18	2018-19
11 3	Kritika Kapoor	Singapore	5	B.A. English Honours	UG	ASLA	November-18	2018-19
11 4	Mohammad Dawood	Dubai	1	M.Tech(NCS)	PG	ASET	November-18	2018-19
11 5	Hima Sekhar Sakhamuri	France	3	B.Tech - CSE	UG	ASET	November-18	2018-19
Even 2019								
11 6	Samridhi Ahlawat	Singapore	2	BBA- General	UG	ABS	April-19	2018-19
11 7	Sai Rishika Alagharu	Singapore	2	BBA- General	UG	ABS	April-19	2018-19
11 8	Nikhil	Singapore	2	BBA- General	UG	ABS	April-19	2018-19
11 9	Akshita Yadav	Dubai	6	BBA- General	UG	ABS	April-19	2018-19
12 0	Anushka Singh	Dubai	6	BBA (B&F)	UG	ABS	April-19	2018-19
12 1	Vishakha Bhalla	Australia	4	B.Sc Clinical Psychology	UG	AIBAS	April-19	2018-19
12 2	Hibu Kapi	Singapore	4	M. Sc. Clinical Psychology	PG	AIBAS	April-19	2018-19
12 3	Dapinder Kaur	Singapore	4	M. Sc. Clinical Psychology	PG	AIBAS	April-19	2018-19
12 4	Srilalitha Parameswaran	Singapore	4	M. Sc. Clinical Psychology	PG	AIBAS	April-19	2018-19
12 5	Angelina Patrick	Singapore	4	M. Sc. Applied Psychology	PG	AIBAS	April-19	2018-19
12 6	Nidhi Polomanna Raman	Singapore	2	M. Sc. Clinical Psychology	PG	AIBAS	April-19	2018-19



127	Miranda Talukdar	Singapore	4	M.Sc. Clinical Psychology	PG	AIBAS	April-19	2018-19
128	Shahrukh Khan	Singapore	8	BID	UG	AID	April-19	2018-19
129	Ujjagar Soni	Singapore	8	BID	UG	AID	April-19	2018-19
130	SUGANDHA	Singapore	8	BID	UG	AID	April-19	2018-19
131	Abhishek Agarwal	London	8	B.Com., LL.B. (Hons.)	UG	ALS	April-19	2018-19
132	Aakash Janghu	London	8	B.Com., LL.B. (Hons.)	UG	ALS	April-19	2018-19
133	Ahmad Naweed Ahmady	Australia	2	M. Tech. (CTM)	PG	ASET	April-19	2018-19
134	Sahil Yadav	Singapore	2	M. Tech. IPE	PG	ASET	April-19	2018-19
135	Mansi Verma	Singapore	6	B. Des. FD	UG	ASFFDT	April-19	2018-19
136	Sumit	Singapore	2	B.A. Eng. Hons.	UG	ASLA	April-19	2018-19
Even 2019								
137	Vanshaj Gandhi	USA	4	B. Sc. Clinical Psychology	UG	AIBAS	May-19	2018-19
Odd 2019								
138	Pramod Kumar Varma Mudunuri	Dubai	1	MBA(GENERAL)	PG	ABS	November-19	2019-20
139	Zienat Bazami	Dubai	1	MBA(HHM)	PG	ABS	November-19	2019-20
140	Madhuparna Chakraborty	Dubai	1	MBA(HM)	PG	ABS	November-19	2019-20



14 1	Priya Bishnoi	Dubai	3	MBA	PG	ABS	November-19	2019-20
14 2	Himanshu Nishikant	Dubai	3	MBA	PG	ABS	November-19	2019-20
14 3	Diwanshi Gupta	Dubai	3	MBA	PG	ABS	November-19	2019-20
14 4	Parul Sharma	Dubai	3	MBA	PG	ABS	November-19	2019-20
14 5	Divyanshu Sharma	UK	3	M. Sc. Clinical Psychology	PG	AIBAS	November-19	2019-20
14 6	Suhana Gupta	UK	3	M. Sc. Clinical Psychology	PG	AIBAS	November-19	2019-20
14 7	Yatin Singla	UK	5	B Com. (H)	UG	ACC	November-19	2019-20
14 8	Anshu Thakran	UK	3	B Com. (H)	UG	ACC	November-19	2019-20
14 9	Shivam	UK	1	BBA	UG	ABS	November-19	2019-20
15 0	Pranjal Goel	UK	3	B Com. (H)	UG	ACC	November-19	2019-20
15 1	Durgesh Chaudhary	UK	5	BA LLB	UG	ALS	November-19	2019-20
15 2	Kanhaiya Lal Agrawal	Singapore	3	BA Political Science	UG	ASLA	November-19	2019-20
15 3	Amit Kataria	Singapore	1	BBA Gen	UG	ABS	November-19	2019-20
15 4	Himanshu	Singapore	1	BBA Gen	UG	ABS	November-19	2019-20
15 5	Vivek Kumar	Singapore	5	B. Com. (Hons)	UG	ACC	November-19	2019-20
15 6	Mohammad Dawood Momand	Singapore	3	M.Tech	PG	ASET	November-19	2019-20



157	Amrita Arya	Singapore	5	M. Sc. (D & N)	PG	AMS	November-19	2019-20
158	Ishan Gera	Singapore	5	B. A. (J& MC)	UG	ASCO	November-19	2019-20
159	Gaurav Jindal	Singapore	5	B. Com. (Hons)	UG	ACC	November-19	2019-20
160	Digvijay singh Rathore	Singapore	5	BA(J&MC)	UG	ASCO	November-19	2019-20
161	Ashmita Pawar	Singapore	5	BA Applied Psychology	UG	AIBAS	November-19	2019-20
162	Sushmita Pawar	Singapore	3	B. Sc. Clinical Psychology	UG	AIBAS	November-19	2019-20
163	Pravesh Thakran	Singapore	9	BA LLB (Hons)	UG	ALS	November-19	2019-20
164	Amar Sparsh raj	Australia	9	B. Tech +MBA	PG	ASET	November-19	2019-20
165	Gaytri Ahuja	USA	9	BBA LLB	UG	ALS	November-19	2019-20

emphasis to the MOON and Mars

8. 60 IIRS Outreach Programme on Application of Geoinformatics in Ecological Studies
9. 61 IIRS Outreach Programme on Satellite Photogrammetry and its Application
10. 62 IIRS Outreach Programme on Geospatial Inputs for Water Plan Formulation
11. 63 Outreach Programme on Remote Sensing Applications in Agricultural Water Management
12. 64 Outreach Programme- Basics of Remote Sensing Geographical Information System and Global Navigation Satellite System
13. 65 IIRS Outreach programme on Remote Sensing and Digital Image Analysis
14. 67 IIRS Outreach programme on Understanding of Coastal Erosion Processes using Remote Sensing and Numerical Modelling
15. 69-IIRS Outreach programme on RS & GIS Applications
16. 71-IIRS Outreach programme on Advances in SAR-Polarimetry & Interferometry
17. 72-IIRS Outreach programme on Basic of Geocomputation and Geoweb Services





Visit to NASA Langley Research Center, USA



SAP Students Spending Leisure Time in USA



SAP USA Students on Visit to Adelphi University, USA



Choice Based Credit System/ Flexible Credit System

Background- Achieving **academic excellence** expresses the core philosophy at Amity University Haryana and this is the driving force behind rigorous academic programmes and high quality teaching which instil a spirit of learning amongst students. Our academic processes focus on

- A high level scholastic achievement
- An involving attention to detail.
- Quality Research and innovation.
- Advanced critical analysis

Amity University Haryana has the vision to develop as an **Industry Integrated University** We believe in learning that takes students beyond the classroom and into the real world where they must use instinct, negotiating skills, collaboration and experiential learning with innovation.

Our pedagogy offers the opportunity to explore intellectual possibility. A coherent, integrated curriculum is the backbone. It challenges the young Amitian to risk an opinion, to listen to the voice of others, to explore intellectual pathways and to discover new academic passions.

Our academic processes need to be aligned with our philosophy of achieving academic excellence and vision of being an Industry Integrated University. **The introduction of the Choice based Credit System/ Flexible Credit System** in the form of Flexi Learn from January 2013 is a step towards the same. The flexible credit system focuses on leveraging the talent and innovative capabilities of the budding professionals to meet the needs of the contemporary dynamic business environment thus making the student more industry ready.

What Choice Based Credit System Means

Choice based credit system offers **cross programme education** i.e. it allows students to opt for courses cutting across disciplines. This enables the students to acquire a more holistic perspective and thus have better understanding of issues. The student has flexibility as he has a wide option of courses to choose from. For example a student pursuing BA Economics Honors can now choose courses from disciplines other than Economics like a course in Photography or Animation. Flexible credit system also permits credit transfers and earning credits through MOOCs and live projects. It gives the students the flexibility to **design their own degree**.

Objectives of the Choice Based Credit System

- (i) A multi disciplinary and application oriented focus is expected to make the student industry ready.
- (ii) The student will be able to build on his strength areas by choosing courses in areas which interest him.
- (iii) Develop innovative and creative skills by giving the students a wider perspective through a wide array of course offerings





Highlights of Flexi Learn

- (i) The course delivery is a perfect blend of
 - Blended learning
 - Classroom contact sessions
 - Workshops/ Seminars/ Certification programme
 - Substantial project work and Assignments with industry relevance
- (ii) Value added courses in Behavioural Science, Communication and Foreign Language which differently strength in the form of compulsory offered across the university for which the students are being offered credits
- (iii) **Study Abroad Program**-The student has the option of earning credits through a well designed 4 – 6 weeks study abroad program which helps the student to get global exposure.
- (iv) The courses belong to areas which are important for the holistic development of an individual. These areas includes
 - Values and ethics
 - Environmental Issues
 - Technology
 - Communication
 - Cross Cultural exposure

Flexibility- Under the CBCS the student has the following options

- (i) Option of choosing a minor along with the major area of study.
- (ii) Allow credit transfer from one programme to another (in case the student decides to shift) – subject to meeting the eligibility criteria.
- (iii) Freedom to choose courses from other programmes.
- (iv) Earn credits through live projects/ community projects/ workshops.
- (v) Option of taking a break after diploma and then continuing to earn a degree.
- (vi) Transfer credits to other universities (in case of twinning programme with universities abroad)
- (vii) Course credits through MOOC's

Structure of Choice Based Credit System

To successfully earn a degree a student has to complete certain fixed number of credits. These credits can be earned through the following categories of courses

Core courses- Every semester a student compulsorily takes these courses. These courses may include compulsory summer internships and projects, dissertation, field study/ clinical exposure etc.

Concentration Electives- These are courses in related areas which a student takes to get a deeper understanding. A student can choose his subjects from a list of subjects available to him. However a **minimum cohort of 10 students** in a subject is mandatory to run a course.

These courses also include Projects, Workshops/ Certification (Discipline specific), Term papers and Study Abroad Program (4-6 weeks)



Open Electives- These are the courses being offered across the university by any of the schools/Institutes. The following open electives are compulsory for all students

- (i) Foreign Language – A student can choose from the following languages- French, German, Spanish, Russian, Chinese, Portuguese, Korean & Japanese
- (ii) Courses in Behavioural Science (1 Credit per semester)
- (iii) Courses in Communication Skill (1 Credit per semester)
- (iv) Environmental Studies (for all UG programs)

In addition to the above courses the student can choose from a list of courses being offered by other schools/ centres of excellence. A student has to earn 3 credits per semester from these courses. These courses have been grouped into various tracks and if a student earns **18 credits** from courses in a particular track he/she is eligible to get a **minor** in that track area. For example if a student follows the Animation track and chooses one course each semester for 6 semesters from that track , at the end of the programme he will get a B.A. (Honors) degree with a minor in Animation. The list of minor track areas as mentioned in **Annexure**



LIST OF OPEN ELECTIVES (MINOR TRACKS) 2020

The following are the tracks with the minimum credit requirement which are available to the students

Sl. No.	Track with details of courses	No of credits to be earned for getting a minor degree	Prerequisites if any
1.	Accounting Semester 1-COM2151- Financial Accounting-I Semester 2-COM2251- Financial Accounting-II Semester 3-COM2351- Corporate Accounting Semester 4-COM2451- Financial Management Semester 5-COM2551- Cost Accounting Semester 6-COM2651- Management Accounting	18	No prerequisites
2.	Aerospace Engineering Semester 1-ASE2351- Elements of Aerospace Engineering Semester 2-ASE2451- Elements of Space Engineering Semester 3-ASE2551- Aircraft System Semester 4-ASE2651- Aircraft Stability & Control Semester 5-ASE2751- Aircraft Performance Semester 6-ASE2851- Introduction to Automatic Flight Control	18	Physics, Chemistry, Maths in class 12 th
3.	Animation Semester 1-ANI2151- Basics of Sketching & Drawing Semester 2-ANI2251- Basics of HTML Semester 3-ANI2351- Introduction to 3D Semester 4-ANI2451- Maya Fundamentals Semester 5-ANI2551- Digital Editing Semester 6-ANI2651- Stop Motion	18	Aptitude Test
4.	Artificial Intelligence Semester 1-CSE2351- Basics of Artificial Intelligence Semester 2-CSE2451- Artificial Neural Networks Semester 3-CSE2551- Fuzzy Logic Semester 4-CSE2651- Introduction to Genetic Algorithm Semester 5-CSE2751- Soft Computing Semester 6-CSE2851- Project (Artificial Intelligence)	18	Physics, Chemistry, Maths in class 12 th
5.	Biomedical	18	Physics



	Semester 1-BME2351- Human Anatomy and Physiology-I Semester 2-BME2451- Bioinstrumentation Semester 3-BME2551- Tissue Engineering Semester 4-BME2651- Biomechanic Semester 5-BME2751- Medical Image Processing Semester 6-BME2851- Seminar-Biomedical Engineering		,Chemistry, Maths in class 12 th
6.	Climate Science Semester 1- AST2151- Basics of Climate Science Semester 2- AST2251- Introduction to Earth System Science Semester 3- AST2351- Cloud Microphysics and Chemistry Semester 4- AST2451-Climate Change: Impact, Vulnerability and Adaption Semester 5- AST2551- Primer of Oceanography Semester 6- AST2651- Fundamentals of Climate Variability and Modeling	18	No prerequisites
7.	Cloud Computing Semester 1-CSE2353- Computer Networks Semester 2-CSE2453- Distributed System Semester 3-CSE2553- High Performance Computing Semester 4-CSE2653- Information Storage Management Semester 5-CSE2753- Interfacing with Virtualization Semester 6- CSE2853- Cloud Computing Tools & Techniques	18	Physics ,Chemistry, Maths in class 12 th
8.	Computer Forensics & Cyber Security Semester 1- FCH2151- Computer Forensics Semester 2- FCH2251- Ethics, Policies and the IT Act Semester 3- FCH2351- Behavioral Biometrics Semester 4- FCH2451- Implementation Practical on MATLAB Semester 5- FCH2551- Cyber Security Semester 6- FCH2651- Incident Response Management	18	No prerequisites
9.	Data Analytics Semester 1- MTH2151-Optimization Techniques Semester 2- MTH2251-Statistics Semester 3- MTH2351-Data Mining Semester 4- MTH2451-Database Management System Semester 5- MTH2551-Introduction to Financial Modeling Semester 6- MTH2651-Statistical Quality Control	18	Mathematics in Class 12 th



10.	Dietetics & Nutrition Semester 1-DAN2151-Principles of Nutrition Semester 2-DAN2251-Family Meal Management Semester 3-DAN2351-Basics Dietetics Semester 4-DAN2451-Advanced Dietetics Semester 5-DAN2551-Community Nutrition Semester 6-DAN2651-Food Chemistry	18	No prerequisites
11.	Economics Semester 1-ECO2151 –Micro Economics-I Semester 2-ECO2251 –Indian Economy Semester 3-ECO2351 –Macro Economics –I Semester 4-ECO2451 –Public Finance Semester 5-ECO2552 –Statistical Methods in Economics Semester 6-ECO2651 –Money, Banking & Financial Markets	18	No prerequisites -- ECO2151 ECO2151,2351 -- ECO2351
12.	Embedded System Semester 1-ECE2352-Introduction to Microprocessor System Semester 2-ECE2452-Microcontroller Semester 3-ECE2552-PCB Fabrication Semester 4-ECE2652-Robotics and Automation Semester 5-ECE2752-Simulation and Modeling Semester 6-ECE2852-Project (Embedded System)	18	Physics ,Chemistry, Maths in class 12 th
13.	English Literature Semester 1-ENG2151-Shakespearean Comedy Semester 2-ENG2251-Romantic Poetry Semester 3-ENG2351-The Novels of England Semester 4-ENG2451-The English Novels of India Semester 5-ENG2551-Genre Fiction Semester 6-ENG2651-Contemporary Literature	18	No prerequisites
14.	Environmental Management Semester 1- ENV2151- Environmental Studies-I * Semester 2- ENV2251- Environmental Studies-II * Semester 3- ENV2351- Environmental Pollution and Waste Management Semester 4- ENV2451-Environmental Management and Industrial Safety Semester 5- ENV2551-Environmental Economics and Globalization Semester 6- ENV2651-Sustainable Development Practices	12 (Available from Sem-3, Total Credits: 12) * Environmental Studies is mandatory for all undergraduate courses and is taught in three different schemes during first year	No prerequisites



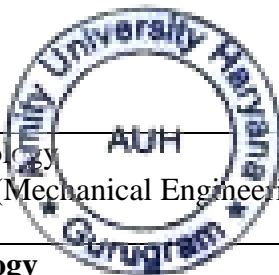
15.	Entrepreneurship Semester 1-MGT2152-Orientation Programme in Entrepreneurship Semester 2-MGT2252-Exploring Business Opportunity Semester 3-MGT2352-Developing a Business Model Semester 4-MGT2452-Translating Business Model into Startup Semester 5-MGT2552-Advanced Programme in Entrepreneurship: Growth Semester 6-MGT2652-Advanced Programme in Entrepreneurship: Expansion	18	No prerequisites
16.	Fashion Management Semester 1-FDT2151- Fashion Art Illustration and Model Drawing Semester 2- FDT2251-Fashion Theory Semester 3- FDT2351-Computer Aided Manufacturing Semester 4- FDT2451-Fashion Management Semester 5- FDT2551-Fashion Forecasting Semester 6- FDT2651- Fashion Retailing & Visual Merchandising	18	No prerequisites
17.	French Studies Semester 1-LAN2161- Professional French for Business-1 Semester 2-LAN2261- Professional French for Business-2 Semester 3-LAN2361-Professional French for Business-3 Semester 4-LAN2461- Professional French for Business-4 Semester 5-LAN2561- Introduction to French Literature & select socio-cultural aspects of France Semester 6-LAN2661-French through activities	18	No prerequisites
18.	Geotechnical Engineering Semester 1-CIV2351- Engineering Geology Semester 2-CIV2451- Geo informatics Semester 3-CIV2551- Geotechnical Engineering-I Semester 4-CIV2651- Geotechnical Engineering-II Semester 5-CIV2751- Project (Geotechnical Engineering) Semester 6-CIV2851- Seminar-Geotechnical Engineering	18	Physics, Chemistry, Maths in class 12 th
19.	German Studies Semester 1-LAN2162-Professional German for Business-1	18	No prerequisites



	Semester 2-LAN2262-Professional German for Business-2 Semester 3-LAN2362-Professional German for Business-3 Semester 4-LAN2462-Professional German for Business-4 Semester 5- LAN2562-Introduction to German Literature & select socio-cultural aspects of Germany Semester 6-LAN2662-German through activities		
20.	History Semester 1- HIS2151-History of Ancient India Semester 2- HIS2251-History of Medieval India Semester 3- HIS2351-History of Modern India Semester 4- HIS2451-The Ancient World Semester 5- HIS2551-Rise of the Modern West Semester 6- HIS2651-History of the World from Mid 20 th Century to the 21 st Century	18	No prerequisites
21.	Human Rights Semester 1- LAW2152-Concept and Theoretical Understanding of Human Rights Semester 2- LAW2252-Systems, Organizations and Instruments of Human Rights Semester 3- LAW2352-Contemporary Human Rights Situations and Issues Semester 4- LAW2452-Specific Themes in Human Rights Semester 5- LAW2552-Legislation Themes in Human Rights Semester 6- LAW2652-Report Writing and Thesis Preparation (Human Rights)	18	LAW2152,LAW 2252, LAW2352,LAW 4252, LAW2552
22.	Instrumentation Engineering Semester 1-ECE2351-Basic Instrumentation Semester 2-ECE2451-Virtual Instrumentation Semester 3-ECE2551-Biomedical Instrumentation Semester 4-ECE2651-Analytical Instrumentation Semester 5-ECE2751-Industrial Process Control Semester 6-ECE2851-Project (Instrumentation Engineering)	18	Physics ,Chemistry, Maths in class 12 th
23.	Intellectual Property Rights Semester 1-LAW2151-Principles of IPR Semester 2- LAW2251-Patent Law and Practices	18	No prerequisites



	Semester 3- LAW2351-Copyright Law and Practice Semester 4- LAW2451-Trademark Law and Practices Semester 5- LAW2551-Emerging Legal Issues and Challenges Semester 6- LAW2651- Future Aspects of Intellectual Property Rights		
24.	Journalism Semester 1-JRN2151-Print Media: Reporting & Editing Semester 2-JRN2251-Basic Photography Semester 3-JRN2351-TV Journalism Semester 4-JRN2451-TV Production & Presentation Semester 5-JRN2551-New Media Semester 6-JRN2651-Media Analysis	18	No prerequisites
25.	Korean Studies Semester 1-LAN2165-Introduction to Korean History & Geography Semester 2-LAN2265-Korean Cultural Perspectives Semester 3-LAN2365-Modern History of Korea & Introduction to Korean Language Semester 4-LAN2465-Contemporary Korea Semester 5-LAN2565-Polity & Economy of Korea Semester 6-LAN2665-Themes in Korean Literature	18	No prerequisites
26.	Laser System Semester 1-LOE2351- Basics of Lasers Semester 2-LOE2451- Laser Technology & Applications Semester 3-LOE2551- Laser Systems & Devices Semester 4-LOE2651- Lasers in Defense Applications Semester 5-LOE2751- Lasers in Industrial Applications Semester 6-LOE2851- Lasers in Atmospheric Studies	18	No prerequisites
27.	Management Semester 1-MGT2151-Management Foundations Semester 2-MGT2251-Marketing Management Semester 3-MGT2351-Organizational Behaviour Semester 4-MGT2451-Business Environment Semester 5-MGT2551-Operations Research Semester 6-MGT2651-Business Law	18	No prerequisites
28.	Mechanical Engineering Semester 1-MAE2352-Thermodynamics Semester 2-MAE2452- Fluid Power Systems Semester 3-MAE2552- KOM Semester 4-MAE2652- DOM	18	Physics, Chemistry, Maths in class 12 th



	Semester 5-MAE2752-Meteorology Semester 6-MAE2852-Project (Mechanical Engineering)		
29.	Materials Science & Technology Semester 1-PHY2151- Fundamentals of Materials Science Semester 2-PHY2251- Classification & Selection of Materials Semester 3-PHY2351- Properties of Materials Semester 4-PHY2451- Manufacturing Processes for Materials Semester 5-PHY2551- Materials Testing & Characterization Semester 6-PHY2651- Materials at Nanoscale	18	No prerequisites
30.	Nanotechnology Semester 1-NAT2152- Basics of Nanoscience Semester 2-NAT2251- Properties of Nanomaterials Semester 3-NAT2352- Vacuum Science & Clean Room Technology Semester 4-NAT2452- Synthesis of Nanomaterials Semester 5-NAT2552- Characterization Techniques Semester 6-NAT2652- Industrial Applications of Nanomaterials	18	No prerequisites
31.	Painting Arts Semester 1-FNA2151- Basics of Drawing and Asian Landscape Semester 2-FNA2251- Basics of Drawing and Monochrome Folk Composition Semester 3-FNA2351- Advanced Drawing and Illustration of Indian Temple Sculpture Semester 4-FNA2451- Advanced Drawing with Ink with brush Illustration Semester 5-FNA2551- Advanced Drawing and Illustration with Mural Art Semester 6-FNA2651- Advanced Drawing and Illustration with Visual Design	18	No prerequisites
32.	Pharmaceuticals Semester 1-CHY2351- Cosmetic Formulation Semester 2-CHY2451- Industrial Management and Safety Process Semester 3-CHY2551- Drug Design Semester 4-CHY2651- Application of Nanotechnology in Medicine	18	No prerequisites



	Semester 5-CHY2751- Intellectual Property Rights and Quality Assurance Semester 6-CHY2851- Pharmaceutical and Cosmetics Sciences Lab		
33.	Physical Education and Sports Management Semester 1- PED2151- Health Education and Sports Semester 2- PED2251- Human Anatomy and Exercise Semester 3- PED2351- Sports Training and Conditioning Semester 4- PED2451- Basics of Sports Management Semester 5- PED2551- Sports Psychology Semester 6- PED2651- Sports Medicine	18	No prerequisites
34.	Political Studies Semester 1- POL2151- Indian National Movement Semester 2- POL2251- Indian State and Politics after Independence Semester 3- POL2351- State Politics in India Semester 4- POL2451- Politics and Media Semester 5- POL2551- South Asia: Political Perspectives Semester 6- POL2651- Post-Cold War World Politics	18	No prerequisites
35.	Psychology Semester 1-PSY2151-Introductory Psychology Semester 2-PSY2251-Abnormal Psychology Semester 3-PSY2351-Basic Cognitive Psychology Semester 4-PSY2451-Life Span Development Semester 5-PSY2551-Psychometric Testing Semester 6-PSY2651-Counselling Psychology	18	No prerequisites
36.	Positive Psychology Semester 1-PSY2152-The Science of Happiness Semester 2-PSY2252-Optimism and Success Semester 3-PSY2352-Resilience and Well Being Semester 4-PSY2452-Positive Psychology & Work Life Semester 5-PSY2552-Creativity & Problem Solving Semester 6-PSY2652-Positive Leadership & Competency Development	18	No prerequisites
37.	Performing Arts Semester 1-PAR2151- Introduction to Performing Arts Semester 2-PAR2251- Dynamics of Dance, Music & Theatre Semester 3-PAR2351- Social relevance of Dance, Music & Drama in Contemporary Indian Scene Semester 4-PAR2451- Indian Folk Arts	18	No prerequisites



	Semester 5-PAR2551- Modern Italian Performing Arts Semester 6-PAR2651- Arts, Aesthetic & Society		
38.	Polymer Technology Semester 1-PTE2151- Polymerization Semester 2-PTE2251- Waste Plastic Recycling Semester 3-PTE2351- Polymer Technology Semester 4-PTE2451- Rubber & Tyre Technology Semester 5-PTE2551- Polymeric Nano Composites Semester 6-PTE2651- Bio-Medical Plastics	18	Physics, Chemistry, Maths/Biology in class 12 th
39.	Quebec Studies Semester 1-LAN2164-Introduction to the French North America- a short history of Quebec Semester 2-LAN2264-Quebec Society Culture & Language Semester 3-LAN2364-Quebec in the World Affairs Semester 4-LAN2464-Political Economy of Quebec Semester 5-LAN2564-Introduction to Major Literary Movements in Quebec-I Semester 6-LAN2664-Introduction to Major Literary Movements in Quebec-II	18	No prerequisites
40.	Renewable Energy Semester 1-SAE2151- Renewable Energy Conversion Systems Semester 2-SAE2251- Introduction to Solar Thermal Engineering Semester 3-SAE2351- Introduction to Solar Photovoltaic Semester 4-SAE2451- Energy from Wastes Semester 5-SAE2551- Renewable Energy for Heat Applications Semester 6-SAE2651- Energy Audit and Energy Management	18	No prerequisites
41.	Spanish Studies Semester 1-LAN2163- EFE Professional Spanish for Business-I Semester 2-LAN2263- EFE Professional Spanish for Business-II Semester 3-LAN2363- EFE Professional Spanish for Business-III Semester 4-LAN2463- EFE Professional Spanish for Business-IV	18	No prerequisites



	Semester 5-LAN2563- Introduction to Spanish Literature & select socio-cultural aspects of Spain Semester 6-LAN2663- Spanish through a series		
42.	Stem Cell Technology Semester 1-SCT2151- Introduction to Stem Cell Technology Semester 2-SCT2251- Fundamental Human Embryology & Developmental Biology Semester 3-SCT2351- Fundamental Cell Biology Human Anatomy & Physiology Semester 4-SCT2451- Human Pluripotent Stem Cell Culture & Differentiation Methods Semester 5-SCT2551- Therapeutic Applications of Human Pluripotent Stem Cells Semester 6-SCT2651- Project & Paper Presentation	18	No prerequisites
43.	Sanskrit Semester 1-SKT2151- Introduction to Sanskrit Language Semester 2-SKT2251- General Introduction to Vedic Literature & Conversational Sanskrit Semester 3-SKT2351- General Introduction to Sanskrit Literature & Sanskrit Conversation Semester 4-SKT2451- Sanskrit Language & Indian Culture Semester 5-SKT2551- Introduction to Sanskrit Linguistics Semester 6-SKT2651- General Introduction to Indian Philosophy & Sanskrit Grammar	18	Basic Knowledge of Hindi
44.	Tagore Studies Semester 1-ENG2152- Rabindranath Tagore in the 21 st Century Semester 2-ENG2252- Tagore- Autobiographies & Biographical Sketches Semester 3-ENG2352- Tagore as a Cultural Icon – Tagore as a Painter & Performer Semester 4-ENG2452- Tagore as a Poet Semester 5-ENG2552- Tagore as a Fiction Writer Semester 6-ENG2652- Tagore and Mass Media	18	No prerequisites
**	Disaster Management DSM2051- Disaster Management	3	Single Semester Course
**	Military Training Foundation GEN2051- Military Training Foundation	3	Single Semester Course



** These are standalone Open Electives offered in each Semester.

LIST OF SKILL TRACKS (MINOR TRACKS)

Sl. No.	Track with details of courses	No of credits to be earned for getting a minor degree	Prerequisites if any
45.	Apparel Merchandising Semester 1- VFD2151–Introduction to Apparel Merchandising Semester 2- VFD2251–Apparel Market Research & Product Analysis Semester 3- VFD2351–Vendor Management & Product Evaluation Semester 4- VFD2451–Prototype Preparation & Merchandise Plan Semester 5- VFD2551–Pre-Production Management Semester 6- VFD2651–Shipment & Documentation Management	18	No Prerequisites VFD2151 VFD2251 VFD2351 VFD2451 VFD2551
46.	Fashion Design Semester 1- VFD2152-Design Eco-System Semester 2- VFD2252- Fashion Design Research Semester 3- VFD2352-Design Preparatory Process Semester 4- VFD2452-Prototype Garment Development Semester 5- VFD2552- Design Development Semester 6- VFD2652-Health & Safety Equilibrium	18	No Prerequisites VFD2152 VFD2252 VFD2352 VFD2452 VFD2552
47.	Food & Beverage Service Semester 1- VHM2152- Basics of Food Service Semester 2- VHM2252- Advanced Food Service Semester 3- VHM2352- Beverage Studies- Basic Semester 4- VHM2452- Beverage Studies-Advanced Semester 5- VHM2552- F&B Service Supervisory Skills Semester 6- VHM2652- F&B Management Skills	18	No prerequisites VHM2152 VHM2252 VHM2352 VHM2452 VHM2552
48.	Food Production Techniques Semester 1- VHM2151- Basics of Food Production Semester 2- VHM2251- Food Production Skills Semester 3- VHM2351- Food Production Operations	18	No prerequisites VHM2151



	Semester 4- VHM2451- Advanced Food Production Semester 5- VHM2551- Food Production Supervisory Skills Semester 6- VHM2651- Food Production Management		VHM2251 VHM2351 VHM2451 VHM2551
49.	Front Office Operations Semester 1- VHM2153- Fundamentals of Front Office Operations Semester 2- VHM2253- Handling Reception Semester 3- VHM2353- Check-in & Check-out Process Semester 4- VHM2453- Front Office Supervisory Skills Semester 5- VHM2553- Front Office Yield Management Semester 6- VHM2653- Managing Front Office	18	No prerequisites VHM2153 VHM2253 VHM2353 VHM2453 VHM2553
50.	Housekeeping Functions Semester 1- VHM2154- Basics of Housekeeping Semester 2- VHM2254- Rules for Cleaning Semester 3- VHM2354- Laundry Operations Semester 4- VHM2454- Maintaining Guest Room Semester 5- VHM2554- Housekeeping Supervisory Skills Semester 6- VHM2654- Housekeeping Management Skills	18	No prerequisites VHM2154 VHM2254 VHM2354 VHM2454 VHM2554
51.	Tourism Operations Semester 1- VTM2151-Fundamentals of Tourism Semester 2- VTM2251-Tour Operations & Tourist Guidance Semester 3- VTM2351-Handling Travel Agency Semester 4- VTM2451-Coordinating Tour Transportations Semester 5- VTM2551-Tourism Management Semester 6- VTM2651-Event Planning	18	No prerequisites VTM2151 VTM2251 VTM2351 VTM2451 VTM2551



▶ Transforming AUH into a 24x7 University

Amity University Haryana, Gurgaon

AUH 24x7 University Committee ▶ Patron: Prof. P. B. Sharma (VC, AUH)

Prof. (Dr.) Sanjay Kr. Jha, Director (ASLA) - Chairperson
Prof. (Dr.) Bhawana Adhikari, Dy Dean Academics – Member
Prof. (Dr.) Janak Kumar Patel, ASET - Member
Dr. Ranjeet Brajpuriya, ASET - Member

The AUH 24x7 University Committee was formed at the behest of His Excellency, the Chancellor, Dr. Aseem Chauhan and Honorable Vice Chancellor of AUH on the 15th of August, 2016.





Transforming AUH into a 24x7 University

Amity University Haryana, Gurgaon

In its pursuit of academic excellence coupled with an overarching human excellence, AUH envisions to embark upon transforming its vibrant campus into a 24x7 University for the holistic growth of its intellectual residents and outreach its services to a large community of beneficiaries round-the-clock.

The paper is divided into two broad sections namely **planning** and **implementation**. It endeavours to lay down, firstly, major strategic plans followed by a brief description on how those plans can be best implemented to make AUH a 24x7 University.

Planning

The vision of making AUH 24x7 can be translated into five broad strategic plans. These will be :

1. Facilitating academic and research opportunities round-the-clock

To facilitate academic and research opportunities beyond office hours, it is imperative to create a round-the-clock enabling environment in which not only excellent research could thrive but more importantly it could produce more and more young researchers of international stature from all streams. To strengthen the above plan, the following suggestions are being made:

- Creation of University Science Instrumentation Centre (USIC): USIC is envisioned to provide round-the-clock common facilities such as access to high end infrastructure and research labs.
- AUH is committed to research and innovation. A culture of research should be promoted by ensuring that every faculty is enrolled for PhD programme. Those who

are already PhD, need to be further engaged in advanced research.

2. Ensuring secured access to laboratories and library

To ensure round-the-clock secured access to laboratories and library, AUH needs to meet the end-users' demands effectively. In this direction, the following suggestions are being made:

- The academic libraries need to identify and adopt best practices and benchmarks. Thus, preparing guidelines in a standardized manner based on the best practices employed by libraries is significant. This will ultimately enhance the value-based services of academic libraries.
- There should be a digital library with access to reputed journals.
- Library should be functional from 8:00 AM to 10:00 PM to keep up with the spirit of 24X7.

3. Creating and managing serious learning spaces in hostels.

In response to the stated needs, a resource centre comprising the following needs to be created:

- A study hall of 100'X50' size equipped with LAN and WiFi.
- A Seminar Hall
- A Small Auditorium
- Newspaper and Magazine Stand

4. Promoting cultural and professional activities for Amitians

To promote cultural and professional activities, AUH needs to have following hobby clubs :

- Dramatics
- Dance
- Music



- Singing
- Painting
- Language
- Yoga
- Karate
- Public Speaking
- Photography
- Mountaineering

In addition to the above clubs, there is an urgent need to:

- Establishing Quality Improvement Programme (QIP) centre.
- Establishing a Professional Development Programme (PDP) centre.
- Making AUH a nodal centre to conduct various examinations of public and private sectors of state and national level. This will help AUH in the long run.
- Organizing a monthly discourse to instill moral and ethical values in students and faculty members.

5. Imparting services for the well-being of neighboring rural areas

AUH needs to connect with the rural areas for the following:

- Teach India programme
- Mentoring the villagers with a group of students
- Plantation programme can be initiated.

6. Miscellaneous need-based amenities and activities.

- A pediatrician, physician, cardiologist and a gynecologist should be available round the clock on the campus to meet medical urgency of AUH residents.
- A Pharmacy Store should be opened with immediate effect.
- An admission helpline cell should be established to address the admission related queries of parents and students.

The timing for gymnasium needs to be extended from 04:00 AM to 08:00 AM and from 05:00 PM to 10:00 PM.

- Faculty workstation should be kept open till 09:00 PM.
- Gents' and Ladies' Salon should be established on the campus.
- Round the clock University Shuttle Service between Panchgaon (Bikanerwala) and AUH Campus should be started.
- Hourly shuttle service should be provided to commute frequently between AUH and MG Road Gurgaon.
- Space for teaching and non-teaching staff should be reserved in the existing cafeteria.
- Food quality needs to be improved in canteens.
- There should be an Amusement Park.
- An urgency is felt to have a school from LKG to Class Six exclusively for the residents of the AUH Campus.
- Faculty Lounge
- A vigilance team should be deployed to ensure that AUH campus is a drugs and gambling free zone.
- Apartment lift should be operational round-the-clock.
- AUH campus needs to have a decent gift shop and round-the-clock cafeteria.
- AUH needs to have three swimming pools exclusively for faculty, students, and kids.

Implementation

In order to implement the aforementioned strategic plans, the designated committee urges the following actions to be taken :

1. Identification of space for USIC.
2. Identification of USIC In-charge.
3. Formation of five committees.



- 4. Each committee will comprise the faculty members and three student members.
- 5. Each committee will be guided by a coordinator.



In all, five different committees have been identified to implement varied academic and recreational activities to make AUH a 24x7 University in true sense. Following are the details of each committee:

a. Standing committee

The Standing Committee, the highest executive body will be guided by Hon'ble Vice Chancellor of AUH, Prof. P. B. Sharma.

The committee comprises Prof. S. K. Jha, Chairperson and three members: Prof. Bhavana Adhikari, Prof. Janak Patel, and Dr. Ranjeet Brajpuriya. The committee is expected to facilitate the overall functioning and review desirable outcomes of different activities to oversee periodically that the outcomes are there. The Standing Committee is also obliged to apprise Hon'ble Vice Chancellor of the ongoing 24x7 activities by submitting a brief report every fortnight.

b. Academic Committee

The Academic Committee is one of the working committees that will be responsible for promoting all types of activities related to teaching-learning and research. It is expected to ensure implementation of all the academic and research activities on a regular basis and identify potential impediments and vulnerable factors therein. The committee is also expected to rectify the impending factors. Each school of AUH will have its own academic committee comprising three members including a chairperson.

c. Cultural Committee

ASFA, ASFDT, ASCO, ASH, AIBAS and ASLA are the schools identified to be major contributors in terms of cultural and recreational activities. These schools need to play leading roles in various activities and events.

d. Monitoring Committee

The Monitoring Committee will be responsible to ensure desirable outcome of all endeavours and inculcate a desirable amount of discipline among students during any cultural or academic activities.

e. Reporting Committee

The Reporting Committee will not only ensure dissemination of any upcoming events to the AUH community but also submit a weekly report of all the events held during a week. The report has to be submitted to one of the designated members of the standing committee for the same

**Consolidated Report of AUH 24x7 Activities
(October 2016 – March 2020)**



(Total Events Planned: 180)

(Total Events Held: 144)

AUH 24x7 Initiative commenced from 20th October 2016. As per the (AUH 24x7) calendar, Amity University, Haryana has organized the following events to rejuvenate the campus residents.

October (2016) AUH 24x7 Activities

1. “The Great Debate and the I-Capture Photography Competition and Exhibition by *Amity School of Liberal Arts (ASLA)* on 20th October 2016 from 6:00 pm -7:30 pm.

January (2017) AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM) on 17th January onwards.
2. GRAPHICOS (Exhibition of Print Making) by Amity School of Fine Arts (**ASFA**) in the Art Gallery from 6.30 PM to 8.30 PM on 17th January, 2017.
3. Painting Competition by Amity School of Architecture and Planning (**ASAP**) on 24th January, 2017 from 6.30 PM to 8.30 PM in B, Block front foyer.
4. Movie Screening of BEFORE THE FLOOD by Amity School of Environmental and Earth Sciences (**ASEES**) in B, Block Auditorium at 6 PM on 31st January, 2017.
5. **Amity School of Liberal Arts** keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

February (2017) Report of AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. Kalanjali (Dance and Drama) by *Amity School of Engineering and Technology (ASET)* from 5.30 PM to 7.30 PM on 22nd February, 2017.
3. KALEIDOSCOPE-1 (Cultural Soiree) by *Amity School of Hospitality (ASH)* from 6.00 PM to 7.30 PM in B, Block Auditorium on 23rd February, 2017.
4. International Singing Evening by *Amity School of Languages (ASL)* in B, Block Auditorium at 5 PM on 28th February, 2017.
5. BUDDING STROKE (Art Exhibition) by *Amity School of Fine Arts (ASFA)* in the Art Gallery from 5.30 PM to 7.30 PM on 28th February, 2017.
6. **Amity School of Liberal Arts** keeps its Music Lab open everyday from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

March (2017) Report of AUH 24x7 Activities.

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. Antarang (A Musical Theatre Play) by *Amity Institutes of Behavioral and Allied Sciences (AIBAS)* from 5:00 PM – 7:00 PM on 2nd March, 2017.
3. Kalanjali (Dance and Drama) by *Amity School of Biotechnology (AIB)* from 5.30 PM to 7.30 PM on 9th March, 2017.
4. Chess Competition by *Amity School of Liberal Arts (ASLA)* from 4:30 PM to 7: 30 PM on 21st March, 2017.

April (2017) Report of AUH 24x7 Activities



1. “FOOTLOOSE” by *Amity School of Applied Sciences* from (ASAS) 5:00 PM – 7:00 PM on 5th April, 2017.
2. “Diarios de Motocicleta” (International Movie Screening) by *Amity School of Languages* (ASL) from 5.30 PM to 7.45 PM on 6th April, 2017.
3. “Nutritious Recipe” by *Amity Medical School* (AMS) from 4.30 PM to 6.45 PM on 6th April, 2017.
4. “Certificate Course in Yoga” by *Amity School of Liberal Arts* (ASLA) from 6:30 PM to 7:30 PM 19th April – 19th May, 2017.
5. Sparkling Colour (Painting Exhibition) by *Amity School of fine Arts* (ASFA) from 5.00 PM to 7.00 PM on 18th April, 2017.
6. “Ye Shaam Mastani” by *Amity School of Environmental and Earth Sciences* (ASEES) from 4.30 PM onwards on 18th April, 2017.
7. “A few Good Men” (A Movie on Court Marshal) by *Amity Law School* (ALS) from 4.30 PM onwards on 20th April, 2017.

July (2017) Report of AUH 24x7 Activities

1. ASCO screened a movie "Gone with the Wind", a Hollywood classic on 26th July 2017 at 5.00 PM in B Block Auditorium.

August (2017) Report of AUH 24x7 Activities

No 24x7 activities could be held in the month of August 2017 due to power shortage.

September (2017) Report of AUH 24x7 Activities

1. **Technofun’2017** organized by *Amity School of Engineering and Technology* (ASET) from 5:30 PM – 7:30 PM on 7th September, 2017.
2. **Hindi Diwas** organized by *Amity School of Communication* (ASCO) from 5.30 PM to 7.30 PM on 14th September, 2017.
3. **Law Quiz** organized by *Amity Law School*(ALS) from 4:40 PM to 6: 00 PM on 21st September, 2017.
4. Movie screening of **Ekatma Manavdarshan** : A documentary film on the life of Pandit Deen Dayal Upadhaya organized by *Amity School of liberal Arts* (ASLA) on 22nd September, 2017.
5. **Yoga Workshop** organized by *Amity School of Liberal Arts* (ASLA) for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
6. **Musical Instrumental Practice** organized by *Amity School of Liberal Arts* (ASLA) from 1.00 PM to 2.00 PM.

October (2017) Report of AUH 24x7 Activities

1. **Hand made Poster & Collage Making Competition on “Color the Science”** by *Amity School of Applied Science*(ASAS) and *technology* from 5:30 PM – 7:30 PM on 10th October, 2017. (Participants - 20)
2. **Screening of Picture – “Maanjhi”** by *Amity College of Commerce* (ACC) from 5.30 PM to 7.30 PM on 24th October, 2017. (Audience - 52)



3. **Instrumental Practice** organized by Amity School of Liberal Arts (ASLA) from 1.00 PM to 2.00 PM during weekdays.

November (2017) Report of AUH 24x7 Activities

1. **“Evening Extravaganza”** by Amity School of Applied Science (ASAS) from 5:30 PM – 7:30 PM on 2nd November, 2017. (Participants - 30)
2. **“The old is the new NEW.”** by Amity School of Fashion and Technology (ASFT) from 5.00 PM to 7.00 PM on 7th November, 2017. (Participants - 40)
3. **“Team Building Exercise”** by Amity Business School (ABS) from 4.00 PM to 7.00 PM on 14th November, 2017. (Participants - 35)
4. **“International day for Tolerance and Ozone Protection”** by Amity College of Nursing (ACON) from 5.30 PM to 7.00 PM on 16th November, 2017. (Participants - 40)
5. **“Yoga Workshop”** organized by Amity School of Liberal Arts (ASLA) from 6.30 PM to 7.30 PM on Monday, Tuesday, Thursday, and Friday. (Participants - 12)
7. **“Instrumental practice”** organized by Amity School of Liberal Arts (ASLA) from 1.00 PM to 2.00 PM during weekdays.

April (2018) Report of AUH 24x7 Activities

1. **“Foot Loose”** by Amity School of Applied Science (ASAS) from 5:00 PM – 6:30 PM on 5th April, 2018.
2. **“Socio Legal Quiz”** by Amity Law School (ALS) from 6:15 PM on 5th April, 2018.
3. **“Art and Music Event”** by Amity School of Fine Arts (ASFA) from 5:30 PM – 7:00 PM on 6th April, 2018.
4. **“Ramp Walk and Paper Dress Making”** by Amity School of Fashion and Technology (ASFT) from 5:30 PM – 7:30 PM on 10th April, 2018.
5. **“Movie Screening – Chak De India”** by Amity College of Commerce (ACC) from 6:00 PM – 8:00 PM on 10th April, 2018.
6. **“LAN PARTY Game Event – Mini Militia”** by Amity School of Engineering and Technology (ASET) from 5:00 PM – 7:00 PM on 12th April, 2018.
7. **“Solo Dance Competition”** by Amity College of Nursing (ACC) from 5:30 PM – 7:30 PM on 17th April, 2018.
8. **“International Movie Screening”** by Amity School of Languages (ASL) from 5:00 PM – 7:00 PM on 19th April, 2018.
9. **“Yoga for Efficiency, Concentration and Stress-Free Living”** by Amity School of Biotechnology (AIB) from 6:00 AM – 7:30 AM on 24th April, 2018

August (2018) Report of AUH 24x7 Activities



1. “Standup Comedy” by *Amity Business School (ABS)* from 5:15 PM – 6:30 PM on 9th August, 2018
2. “Quench Brainz Quest” by *Amity School of Applied Science (ASAS)* from 5:30 PM – 6:30 PM on 21st August, 2018.
3. “Poster Competition – Paint for Kerela” by *Amity School of Fine Arts (ASFA)* from 4:00 PM – 6:00 PM on 28th August, 2018.
4. “Chess Competition” by *Amity School of Liberal Arts (ASLA)* from 4:30 PM – 6:00 PM on 29th August, 2018.
5. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).

September (2018) Report of AUH 24x7 Activities

1. “Janmashthmi Celebration” by *Amity School of Languages (ASL)* from 5:15 PM – 7:30 PM on 4th September, 2018.
2. “Ganesh Chaturthi Pooja” by *Amity Law School (ALS)* from 5:30 PM – 7:15 PM on 13th September, 2018.
3. “Ganesh Chaturthi Pooja” by *Amity Institute of Biotechnology (AIB)* from 5:30 PM – 7:15 PM on 13th – 16th September, 2018.
4. “Kavi-Sammelan' named "RAS - SADHANA": by *Amity Law School (ALS)* from 4:30 PM – 6:00 PM on 20th September, 2018.
5. “Emotional Freedom Techniques”: by *Amity Institute of Behavioral & Applied Science (AIBAS)* from 4:30 PM – 6:00 PM on 25th September, 2018.

October (2018) Report of AUH 24x7 Activities

1. “Emotional Freedom Technique” by *Amity Institute of Behavioral & Allied Science (AIBAS)* from 5:15 PM – 7:30 PM on 1st October, 2018.
2. “Stage Play of Reservation” by *Amity Law School (ALS)* from 4:30 PM – 6:30 PM on 11th October, 2018
3. “Go Green, Art from waste” by *Amity College of Nursing (ACON)* from 5:30 PM – 7:15 PM on 13th – 25th October, 2018.
4. “Ek Shaam Hindi Sahitya Se”: by *Amity Institute of Biotechnology (AIB)* from 6:30 PM – 8:00 PM on 29th October, 2018.

April (2019) Report of AUH 24x7 Activities

1. “Canvas Painting” by *Amity School of Architecture and Planning (ASAP)* from 5.30 PM to 7.45 PM on 12th April, 2019.
2. “Taxation and Wealth Literacy: A Financial Journey for Non- Financial Persons” by *Amity School of Engineering and Technology (ASET)* from 9.45 AM to 12.45 PM on 22nd April 2019.
3. “Chess Competition” by *Amity School of Liberal Arts (ASLA)* from 5.00 PM to 7:30 PM 26th April 2019.
4. “Rangoli: Save the Forest” by *Amity College of Nursing (ACON)* from 5:00 PM – 6:00 PM on 26th March, 2019.

June (2019) Report of AUH 24x7 Activities



1. **Poster Making Competition** by Amity College of Nursing (**ACON**) from 5.00 PM to 7.00 PM on 28th May 2019.
2. **Documentary Film Festival** by Amity School of Communication (**ASCO**) from 4:00 PM to 6:00 PM on 14th June, 2019.
3. **Movie Screening (Raazi)** by Institutes of Behavioral and Allied Sciences (**AIBAS**) from 5:00 PM – 7:00 PM on 18th June, 2019.
4. **Singing Competition** by Amity Medical School (**AMS**) from 5:00 PM to 6:30 PM on 20th June 2019.
5. **Chess Competition** by Amity College of Commerce (**ACC**) from 4:00 PM to 6:00 PM on 26th June 2019.
6. **My Campus through my Lens** Photography Competition by Amity School of Liberal Arts (**ASLA**) from 3:00 PM to 5:00 PM on 28th June, 2019.
7. Amity School of Liberal Arts (**ASLA**) keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

July (2019) Report of AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. Musical Evening by Amity School of Applied Sciences (**ASAS**) from 6.30 PM to 7.30 PM on 16th July, 2019.
3. “Recipe competition on the Theme Low Carbohydrate snacks” by *Amity Medical School (AMS)* from 4:00 PM to 5:00 PM on 22nd July, 2019.
4. “Painting Workshop - Painting on Poem” by *Amity School of Fine Arts (ASFA)* from 5:00 PM – 6:30 PM on 31st July, 2019.
5. *Amity School of Liberal Arts (ASLA)* keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

August (2019) Report of AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. Sketch Making Competition by Amity School of Liberal Arts (**ASLA**) from 3.00 PM to 5.00 PM on 7th August, 2019.
3. “Food Counter Week” by *Amity Medical School (AMS)* from 4:00 PM to 6:00 PM to 7.00PM on 19th to 22nd August, 2019.
4. “Tools after School” by *Amity Institute of Behavioral Sciences (AIBAS)* from 5:30 PM – 6:30 PM on 22nd August, 2019.
5. “Kalanjali” by *Amity School of Engineering and Technology (ASET)* from 5:30 PM to 7:45 PM on 22nd August, 2019.
6. “Speech Competition – (Freedom of Expression)” by *Amity college of Nursing (ACON)* from 5:00 PM to 6.30 PM on 22nd August, 2019.
7. “Drawing Exhibition” by *Amity School of Fine Arts (ASFA)* from 4:30 PM – 6:00 PM on 27th August, 2019.
8. “Movie Screening” by *Amity School of Hospitality (ASH)* from 4:40 PM – 6:45 PM on 28th August, 2019.
9. “Drive towards Plastic free Campus” by *Amity Institute of Biotechnology (AIB)* from 4:30 PM – 6:30 PM on 30th August, 2019.



10. *Amity School of Liberal Arts (ASLA)* keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

September (2019) Report of AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. “Eye Check-up for Athlete” by **Amity Medical School (AMS)** from 4.15 PM to 5.15 PM on 25th September, 2019.
3. “Cultural Bonanza” by **Amity School of Earth and Environmental Science(ASEES)** from 4:00 PM to 3:00 PM to 5.00PM on 25th September, 2019.
4. “Chess Competition” by **Amity School of Liberal Arts (ASLA)** from 4:00 PM – 6:00 PM on 11th September, 2019.
5. “Quiz Competition” by **Amity College of Commerce (ACC)** from 3:00 PM to 5:00 PM on 25th September, 2019.
6. “Plantation Drive at Panchgaon” by **Amity Institute of Biotechnology (AIB)** from 5:00 PM to 7.00 PM on 17th September, 2019
7. “Prayas” mock model united nation debate competition by **Amity School Engineering and Technology (ASET)** from 4:30 PM – 7:30 PM on 24th September, 2019.
8. “Face Painting and Body Tattoo” by **Amity School of Fashion Designing and Technology (ASFT)** from 4:00 PM – 6:00 PM on 24th September, 2019.
9. “International Seminar” by **Amity School of Languages (ASL)** from 3.00 PM – 6:30 PM on 20th September, 2019.
10. “Salad Making Competition” by **Amity College of Nursing (ACON)** from 5.00 PM – 6:00 PM on 18th September, 2019.
11. “Film Screening” by **Amity School of Communication (ASCO)** from 3.30 PM – 5:30 PM on 20th September, 2019.
12. “Management Games” by **Amity Business School (ABS)** from 4.30 PM – 6:30 PM on 18th September, 2019.
13. **Amity School of Liberal Arts (ASLA)** keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

October (2019) Report of AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. International Seminar (Ramayana in the contemporary context) by *Amity School of Liberal Arts (ASLA)* from 4:00 PM to 7:00 PM on 11th October, 2019.
3. “Nukad Natak” by *Amity Institute of Behavioral Sciences (ASEES)* from 1:30 PM – 3:30 PM on 23rd October, 2019.
4. International Film Screening (Korean Movie) by *Amity School of Languages (ASL)* from 2:00PM to 4:00PM on 14th October, 2019.
5. “Drawing Exhibition” by *Amity School of Fine Arts (ASFA)* from 4:30 PM – 6:00 PM on 24th October, 2019.
6. “Live Pasta Counter” by *Amity School of Hospitality (ASH)* from 5:00 PM – 8:00 PM on 15th October, 2019.
7. “Kavi Samelon” by *Amity college of Commerce (ACC)* from 2:00 PM – 4:00 PM on 18th October, 2019.
8. “Card Making Competition” by *Amity School Of Applied Sciences (ASAS)* from 6:00 PM – 7:00PM on 22nd October, 2019.



9. *Amity School of Liberal Arts (ASLA)* keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

November (2019) Report of AUH 24x7 Activities

1. "Folk dance competition" by *Amity law school (ALS)* from 5:00 PM to 7:00 PM on 19th November 2019.
2. "Gaon mela" by *Amity law school (ALS)* from 5:00 PM to 7:00 PM on 14th November 2019.
3. "Bollywood Cultural Evening" by *Amity Business School (ABS)* from 3:00 PM to 5:00 PM on 23rd November 2019.
4. "Movie Screening" (Super 30) by *Amity college of commerce (ACC)* from 3:00 PM to 5:00 PM on 11th November 2019.
5. "Solo Song Competition" by *Amity college of Nursing (ACON)* from 4:10 PM to 5:30 PM on 13th November 2019.
6. "Spell Bee Competition" by *Amity School of Applied Sciences (ASAS)* from 5:00 PM to 6:00 PM on 21st November 2019.
7. "Standup Comedy" by *Amity Institute of Biotechnology (AIB)* from 9:15 PM – 10:15 PM on 16th November 2019.
8. "Story telling competition with message" by *Amity school of communication (ASCO)* from 5:00 PM to 6:30 PM on 6th November 2019.
9. "Fashion Fusion" by *Amity School of fashion designing (ASFT)* from 4:30 PM to 5:30 PM on 29th November 2019.
10. *Amity School of Liberal Arts (ASLA)* keeps its Music Lab open every day from 1 PM to 2 PM where students come and practice different types of musical instruments.

January (2020) Report of AUH 24x7 Activities

1. "Glass Painting competition" by *Amity school of architecture and planning (ASAP)* from 3:45 PM to 6:00 PM on 24th January 2020.
2. "Kavi Sammelan (poetry recitation competition) by *Amity college of commerce (ACC)* from 2:30 PM to 4:30 PM on 27th January 2020.
3. "Face painting competition" by *Amity school of hospitality (ASH)* from 5:00 PM to 7:00 PM on 22nd January 2020.
4. "Face painting and body tattoo art" by *Amity school of fashion designing and technology (ASFT)* from 3:00 PM to 5:00 PM on 23rd January 2020.
5. "Psychometric tests ad assessment" by *Amity institute of behavioural and allied sciences (AIBAS)* from 3:00 PM to 4:30 PM on 20th January 2020.
6. "Poster making competition" by *Amity School of liberal arts" (ASLA)* from 4:00 PM to 6:00 PM on 23rd January 2020.
7. "International movie screening "El Dario de motociclata" by *Amity school of languages (ASL)* from 3:00 PM – 5:00 PM on 22nd January 2020.
8. "Infinity Edge" (The art exhibition) by *Amity school of fine arts (ASFA)* from 5:30 PM to 7:30 PM on 22nd January 2020.
9. "Treasure hunt" by *Amity School of earth and environmental sciences (ASEES)* from 4:00 PM to 6:30 PM on 14th January 2020.
10. *Amity School of Liberal Arts (ASLA)* keeps its Music Lab open every day from 1 PM to 2 PM where students come and practice different types of musical instruments.



February (2020) Report of AUH 24x7 Activities

1. Yoga Workshop for Holistic Healing (Bi-Weekly: Tuesday and Thursday from 6 PM - 8 PM).
2. **Cultural Evening** by *Amity School of Earth & Environmental Science (ASEES)* from 3.30 PM to 4.45 PM on 4th February, 2020.
3. **Musical Evening in memory of Kishor Da** by *Amity Business School (ABS)* from 4:00 PM to 5:30 PM on 6th February, 2020.
4. **Solo Dance Competition** by *Amity College of Nursing (ACON)* from 3:00 PM – 5:00 PM on 7th February, 2020.
5. **International Cartoon Drawing** by *Amity School of Languages (ASL)* from 4:00 PM to 6:00 PM on 12th February, 2020.
6. **A workshop on Dining Etiquette** by *Amity School of Hospitality (ASH)* from 5:00 PM to 6.30 PM on 17th February, 2020.
7. **Block Printing** by *Amity Institute of Design & Fashion Technology* from 4:00 PM – 6:00 PM on 18th February, 2020.
8. **Technical** by *Amity School of Engineering & Technology (ASET)* from 3:00 PM – 5:00 PM on 19th February, 2020.
9. **Faber Castell Acrylic Workshop** by *Amity School of Fine Arts (ASFA)* from 5:30 PM – 7:00 PM on 20th February, 2020.
10. **Musical Evening** by *Amity School of Applied Science (ASAS)* from 5:00 PM – 6:30 PM on 24th February, 2020.
11. **Chess Competition** by *Amity School of Liberal Arts (ASLA)* from 3:00 PM – 6:30 PM on 27th February, 2020.
12. *Amity School of Liberal Arts (ASLA)* keeps its Music Lab open every day from 1 PM to 2 PM and 6 PM to 8 PM where students come and practice different types of musical instruments.

March (2020) Report of 24x7 Activities

- **Quiz on COVID-19 “The Lockdown : one month in Wuhan”** by *Amity Institute of Biotechnology (AIB)* from 5:30 PM to 6:30 PM on 6th, March, 2020.

24x7 Calendar

**Annexe – I
AUH 24x7 Calendar (2017)**

Institute	Events	Jan	Feb	Mar	Apr	Jun	Jul	Aug	Sep	Oct	Nov
1. AMS	4	NA	A 2 nd	NA	NA	A 1 st	NA	A 1 st	NA	A 3 rd	NA
2. ASEES	3	NA	NA	NA	A 4 th	NA	NA	NA	A 5 th	A 5 th	NA
3. ASE	4	NA	A 7 th	NA	NA	A 6 th	NA	A 3 rd	NA	A 10 th	NA
4. ABS	4	NA	A 9 th	NA	NA	A 8 th	NA	A 8 th	NA	A 12 th	NA
5. AIBAS	4	NA	NA	A 2 nd	NA	A 13 th	NA	A 10 th	NA	A 17 th	NA
6. ASL	3	NA	A	NA	NA	NA	A	NA	NA	A	NA



			14 th			4 th			19 th	
7.ASC	4	NA	NA	A 7 th	A 15 th	NA	A 15 th	NA	A 24 th	NA
8.ASH	4	NA	A 16 th	NA	A 6 th	NA	A 6 th	NA	A 26 th	NA
9.AIB	3	NA	NA	A 9 th	NA	A 20 th	NA	A 17 th	NA	NA
10.ALS	3	NA	A 21 st	NA	A 11 th	NA	A 11 th	NA	NA	NA
11.ASAS	3	NA	NA	A 14 th	NA	NA	NA	A 22 nd	NA	A 2 nd
12.ASET	4	NA	A 23 rd	NA	A 13 th	NA	A 13 th	NA	A 7 th	NA
13.ASFDNT	4	NA	NA	A 16 th	NA	A 22 nd	NA	A 24 th	NA	A 7 th
14.ASFA	4	A 17 th	A 28 th	NA	A 18 th	NA	A 18 th	NA	NA	NA
15.ASLA	4	NA	NA	A 21 st	NA	A 27 th	NA	NA	A 12 th	A 9 th
16.ASCO	4	NA	NA	NA	A 20 th	NA	A 20 th	NA	A 14 th	A 14 th
17.ACON	3	NA	NA	A 23 rd	NA	NA	NA	NA	A 19 th	A 16 th
18.AIIT	4	A 19 th	NA	NA	A 25 th	NA	A 25 th	NA	A 21 st	NA
19.ASAP	3	A 24 th	NA	A 28 th	NA	NA	NA	NA	A 26 th	NA
20.ASE	3	NA	NA	NA	A 27 th	NA	A 27 th	NA	A 28 th	NA
Total	72	3	8	8	8	8	8	8	8	5

***A** = Activity, **NA** = No Activity

*All the activities take place on Tuesday and Thursday (Bi-weekly)

*All the aforementioned 20 schools are obliged to organize at least four events annually.

Annexe – II

AUH 24x7 (February 2018 – December 2018)

Institute	Events	Feb	Mar	Apr	Aug	Sep	Oct	Nov	Dec
1.AMS	3	1 st			2 nd		2 nd		
2.ASEES	3		1 st		7 th		4 th		
3.ASE	3	6 th		12 th			9 th		
4.ABS	3		6 th		9 th			1 st	



5.AIBAS	3	8 th		14 th			6 th		
6.ASL	3		8 th		4 th		8 th		
7.ACC	3			3 rd	6 th		13 th		
8.ASH	3	13 th			16 th		11 th		
9.AIB	3		13 th			11 th	15 th		
10.ALS	3			5 th	13 th	16 th			
11.ASAS	3	15 th			21 st			3 rd	
12.ASET	3		15 th			18 th		6 th	
13.ASFDNT	3			10 th		20 th	18 th		
14.ASFA	3	19 th			28 th			10 th	
15.ASLA	3	15 th	29 th				23 rd		
16.ASCO	3		22 nd			25 th		13 th	
17.ACON	3	22 nd		17 th			25 th		
18.AIT	3		27 th			27 th		19 th	
19.ASAP	3		29 th				30 th	22 nd	
Total	57	8	9	5	7	8	9	7	4

(January 2020 – November 2020)

Institute	Events	EVEN SEMESTER				ODD SEMESTER			
		Jan	Feb	Mar	Apr	Aug	Sep	Oct	Nov
1.AMS	3	15 th			2 nd			1 st	
2.ASEES	3		5 th		4 th		3 rd		
3.ASE	3	17 th		5 th		1 st			
4.ABS	3		7 th			6 th			5 th
5.AIBAS	3			7 th			5 th		7 th
6.ASL	3	22 nd			9 th			3 rd	
7.ACC	3			12 th		8 th		8 th	



8.ASH	3	24th		11th		10th			
9.AIB	3		14th			13th			12th
10.ALS	3			14th			12th		14th
11.ASAS	3	29th		19th		20th			
12.ASET	3		19th				17th		19th
13.ASFDNT	3	31st			16th			15th	
14.ASFA	3		21st		18th			17th	
15.ASLA	3			21st		22nd		22nd	
16.ASCO	3		26th		23rd		19th		
17.ACON	3			26th		27th		24th	
18.AIIT	3		28th			29th		29th	
19.ASAP	3			28th			24th		21st
20.ASE	3				30th		26th		26th
Total	60	6	7	8	8	8	8	8	7

A brief report on Social Awareness Programmes (SAP)

Introduction:

Social awareness around mental health issues is a major concern worldwide, including India. According to Dr. Brock Chisholm, the first Director-General of the World Health Organization (WHO, 1954), “without mental health there can be no true physical health.” More than 66 years later, the scenario has not altered substantially. About 14% of the global burden of disease is attributed to neuropsychiatric disorders. Equally important is to effectively address the social deviant and high risk taking behaviours among different sections of the society, such as young people. The burden of mental disorders is likely to have been underestimated because of inadequate appreciation of the inter-play between mental illness and other health disorders. There have been numerous calls for invoking political will, for enhancing advocacy and for galvanizing community participation; all with scant improvement in outcomes. Thus, it becomes now opportune to explore the paradigm of mental health awareness as a means of combating stigma, enhancing prevention, ensuring early recognition, and also stimulating simple and practical interventions within the community. Today there are opportunities in terms of growing acknowledgement of mental disorders as key targets of global health action, as well as of leveraging new technologies particularly internet, big data and cell phones in amplifying simple field interventions found successful in primary care and other echelons.

About SAP programmes at AUH:

Amity University, Haryana focuses not only on academic excellence but it emphasis on developing personality by inculcating behavioural skills in all students of the university. The institute believes in rising overall persona of an individual as well as grooming them to become good human beings. University offers various behavioural science programs as a systematic focus on individuals’ success and development in both personal and professional life. The University has mandated Social Awareness Programme to every student as a part of the Behavioral Science course. Courses in behavioural science provide students with fundamental knowledge about human behaviour, development of resilience, how human actions affect their decisions, relationships and overall life. It is basically activity based life skills training program which should be studied at all levels; therefore courses in BS covers all programs (under-graduate, post-graduate & certificate programs too), all semester and prepare students for better positions in all areas of life.

All undergraduate and postgraduate students have to undergo this course compulsorily. This course is being conducted in a workshop mode with focus on behavioural and social skills. This course aims to introduce some of the core aspects of the social and behavioural sciences that every student has to inculcate in their respective fields and professional practice. This course is designed to accomplish the social, ethical and behavioural outcomes of professional practice.

Students have to undertake a social awareness project at the university's campus or nearby villages or any other relevant locality at the end of the classroom teaching activities. The same theme should be related to the theoretical aspects discussed in the course or, by considering the wider social realities. The project aims to sensitize the people on the core social, economic, cultural and environmental issues. A group of students, generally 4-6 students, have to undertake this project and submit a detailed report on the same. An evaluation of the submitted report followed by a viva voce is the assessment mechanism of these assignments. This project would enable the students to become sensitive towards the issues and phenomena they will encounter in the near future in their professional practices and life. The commonly addressed issues and problems, social awareness programme addresses are from the following domains.

Behavioral Sciences Coursework & Assessment:

The behavioral science field focuses on the relationship between a person's behavior and how that impacts their choices and their life. BS is a part of Value Added Courses, offered to all semesters in all the programs, which covers Self-development, Problem solving & creative thinking, Leadership through team building, Stress & coping strategies, Development of personality & human values, Interpersonal & behavioural communication etc.

Each semester include 1 credit course of 12 hrs and social awareness project as a part of assessment

The main aim of Social Awareness Project (SAP) is to make students aware of the issues faced by downtrodden and underprivileged people of our society e.g. lack of education, poor hygiene & sanitation, and so on. Therefore our students under the SAP activity contribute their knowledge & skills towards these social issues by creating awareness among such section of the society around their neighbourhood. The students are supposed to choose a topic contemporary and relevant for their project as well as for the society.

Importance of SAP project:

- It helps the students to interact with community directly, thus helps to learn skills of formal way of communication,
- It helps the students to work in team and teaches us the importance of team building,
- It teaches the students to plan and conduct a programme successfully, thus teaching program planning
- It helps to develop a sense of empathy among students.
- It helps to understand and interpret the verbal and non- verbal expressions and communication,
- It helps to learn about group dynamics and group behaviours,
- It teaches us how to build rapport and maintain good relationships with others,
- It teaches us to resolve group conflicts,
- It enhances leadership skills and role of a leader in effective group functioning



BS workshops teach students the importance of social welfare interventions and also aware them regarding prevailing social issues of our society. The BS workshops and SAP projects have encouraged and empowered the students of Amity University, Haryana to open up their own social welfare clubs in our university to work for social problems of our surrounding society, namely, Shakti, Sakaar and Udaan. These clubs have been started by the students of Amity University, Haryana and are functional by our students only.

Below is the list of few areas and glimpses where students completed their Social Awareness Project:

- Psychotherapy Education
- Guilts, Shame, Superstition
- Energy Conservation
- Prevention of Smoking
- Internet Security
- Stress Management
- Reservation System
- Poverty
- Child Labour
- Social Networking Addiction
- Positivity
- Cataract awareness program
- Education of Underprivileged and Socially Deprived Children
- Cleanliness
- Gender discrimination
- Education of girls
- Sanitation issues
- Youth Suicide
- Save electricity
- Domestic Waste Management
- Effects of technology on the youth
- AIDS Awareness
- Drug Abuse
- Health & Hygiene
- Awareness program on Acid Attack Victims
- UV radiation hazards awareness program
- Green Earth Clean Earth
- Environmental degradation and protection
- Dowry
- School dropouts
- Legal awareness for women

Glimpses of some Social Awareness Programmes:





SHOT ON MI A1
MI DUAL CAMERA

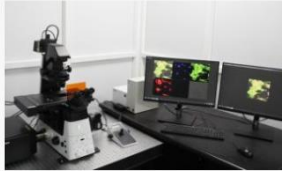




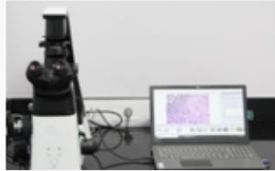




Central Instrument Research Facility (CIRF)



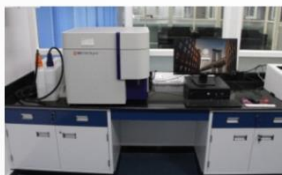
Nikon confocal microscope
(Model:-A1R HD 25)



A1 R (Nikon Microscope)



Beckman Coulter Optima
XPN-100 Ultracentrifuge



BD FACSLyric™ Flow
Cytometer



UPLC H-Class (Waters)



Cary Eclipse
Spectrofluorometer (Agilent)



Cary 100 UV-Visible
spectrophotometer (Agilent)



Cary 630 FTIR
Spectrometer (Agilent)



**Amity University Haryana
Manesar – Gurgaon
INDIA**



Central Instrument Research Facility Amity University Haryana Gurugram



The central instrument research facility (CIRF) is housed at Amity University Haryana, Gurugram provides a central facility of latest and advanced analytical instrument for research and for promoting interdisciplinary research. Instruments are manned by qualified personnel. This facility is available for Amitians and other academic research institutions, industries and organizations.

Workshops organized in 2020

- 1. 2-Days Workshop on Principles and application of Flow Cytometry (FACS) at Central Instrumentation Research Facility (CIRF), Amity University Haryana and BD Biosciences**

Course Highlights

Day 1 (18/02/2020) at Amity University Haryana

09.30 AM -10.00 AM – Registration

10.00 AM - 11.00 AM – Introduction and Opening Remarks

11.00 AM – 11.30 AM – Tea Break

11.30 AM – 1.00 PM – Talk by Dr. Pradeep K Rai (BD) on Basics of Flow Cytometry

1.00 PM – 2.00 PM – Lunch

2.00 PM – 3.00 PM – Hands on Training by Dr. Pradeep K Rai (BD)

(Instrument overview, Start up, Concept of Instrument, Quality control, Software overview)

3.00 PM – 4.00 PM – Hands on Training by Dr. Pradeep K Rai (BD) on Sample preparation for 4 color Immunophenotyping, Autofluorescence adjustment, Compensation, Threshold and Data analysis



Day 2 (19/02/2020) at Amity University Haryana

10.00 AM – 11.00 AM – Talk by Dr. Ravi Tandon, School of Biotechnology, JNU, on Characterization of T cells during HIV infection by Flow Cytometry

11.00 AM – 11.30 AM – Tea Break

11.30 AM – 12.30 PM – Talk by Dr. Vinay Gupta (BD) on Applications of Flow Cytometry

1.00 PM – 2.00 PM – Lunch

2.00 PM – 4.00 PM – Hands on Training By Dr. Vinay Gupta (BD) on Sample preparation, acquisition and analysis for DNA Cell Cycle

General Introduction of the Event

The event was first time organised in AUH ,CIRF to learn the new technique in the field of latest and advanced analytical instrument. Dr.Gargi Bagchi introduced the application scientist to the faculty, students and Research scholars.

Central Instrument Research Facility (CIRF) has been newly established at Amity University, Haryana in 2019, The CIRF provides a central facility of latest and advanced analytical instrument for research and for promoting interdisciplinary research. Instruments are manned by qualified personnel. This facility is available for Amitians and other academic research institutions. Industries and organizations. Learn about the latest advancements and the potential in the field of flow cytometry at the AUH stalls in multiple events. Also, get hands-on classroom training /workshops.

Objectives of the Event-

The workshop was conducted to educate students/researchers/industrial trainees regarding general principles of FACS and its applications to experience the comprehensive, qualitative and quantitative profiling of cells analysis and information with high sample throughput using new model of BD FACS. The beginners got a chance to familiarize themselves with FACS technique and gain confidence by observing their applications and data interpretation as done in real experiment. Apart from hands on training, there was seminar by an expert speaker in the field, Dr. Ravi Tandon, Assistant Professor, JNU, who



xposed the trainees to his research work. This gave the trainees further insight regarding applications and use of FACS. This Workshop focused on the separation, identification and quantitation of cells by using BD FACS Lyne.

Brief about the address/talk of speakers:-

Dr. Pradeep Kumar Rai.

Pradeep Kumar Rai and has been working as an Application Scientist in BD Biosciences, India since 2016 Feb. He carried out his MSc in Biotechnology and PhD in Immunology for project entitled “Protective innate and adaptive immunity against Mycobacterium tuberculosis by lipidated promiscuous peptide” under supervision of Dr. Javed N Agrewala from immunology laboratory, Institute of Microbial Technology, Chandigarh, India. He is passionate about immunology and Flow Cytometry.

He explained instrument overview, start overview, start up, concept of instrument , quality control, software overview, sample preparation for 4 color immunophenotyping auto fluorescence adjustment, compensation threshold and data analysis.

Dr.Ravi Tandon

Dr. Ravi Tandon earned his Ph.D from University of Zürich, Zürich, Switzerland (2002-2008) after which he obtained postdoctoral training from University of California, San Francisco USA (2008-2011). He worked as an **Immunology Staff Scientist** at Hawaii Center for AIDS, University of Hawaii, Honolulu, HI USA May (2011-2014) before joining SBT, JNU as an Assistant Professor in 2014. He has diverse research interests in areas including HIV immunology, Gut microbiology, Mucosal immunity and inflammation, Ageing and Immunity. He has two patents and has been awarded Young Scientist Award by Association of Microbiologists of India in 2015 (December 7-10, 2015).



Photographs





2. One-week online workshop (13-17th July 2020) On Microscopy: From basics to advanced

Amity Institute of Biotechnology (AIB) / Amity Institute of Integrative Sciences and Health (AIISH)
With
Central Instrument Research Facility (CIRF)
Organizing



One Week Online Workshop
on
Microscopy: From Basics to Advanced
13-17th July, 2020

Organizers:
Kaustav Bandyopadhyay
Ujjaini DasGupta
Amit Pandey
Machiavelli Singh

Please register at
<https://forms.gle/PbbxeMbKHnwy4xVF6>

Registration is free (A payment of Rs 500/- is required to obtain a completion certificate)

13th July: Basics of light and fluorescence microscopy
Kaustav Bandyopadhyay, AIB, AUH

14th July: Basics of confocal microscopy
Manish Kumar, Shiv Nadar University

15th July: Electron microscopy and applications
Manidipa Banerjee, IIT Delhi

16th July: Working with tissue samples
Senjuti Sinharoy, NIPGR, New Delhi

17th July: Advanced Microscopic applications
Sheetal Gandotra, IGIB, New Delhi

Jointly organized by

**Amity Institute of Biotechnology
Amity Institute of Integrative Sciences and Health
Central Instrumentation Research Facility**



Speakers And Guest Of The Workshop

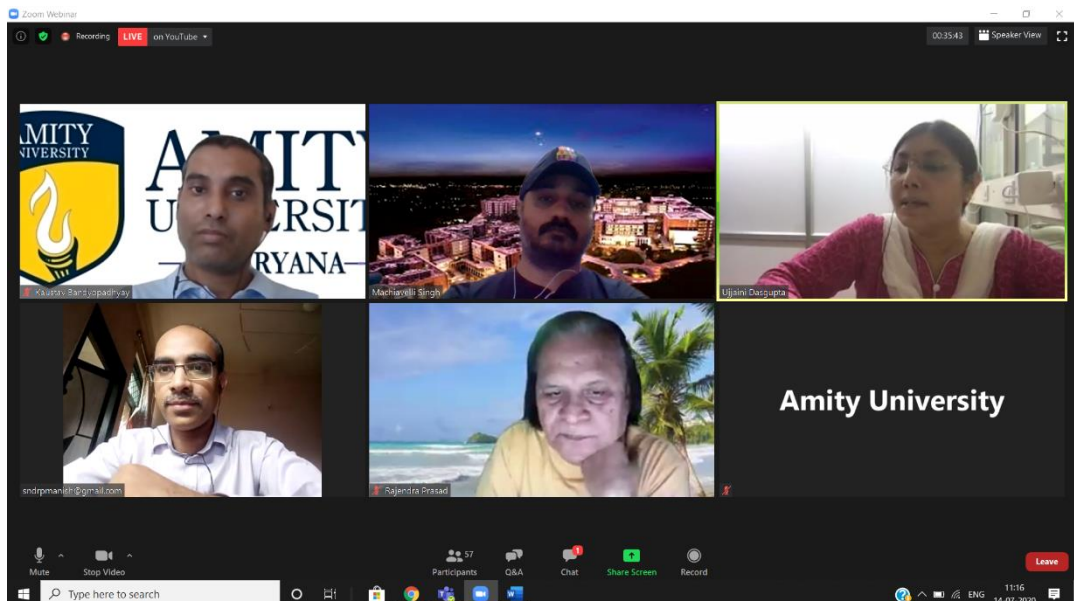
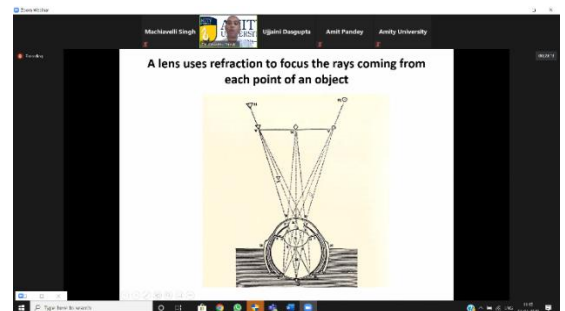
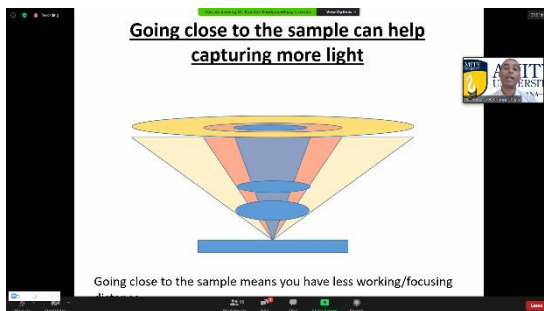
Kaustav Bandyopadhyay, AUH

Basics of light and fluorescence microscopy
(13.07.2020)



The speaker introduced the attendees with basics of optics, and hardware involved in various types of light and fluorescence microscopy. His lecture covered light microscopy, phase contrast microscopy, DIC imaging, and epi-fluorescence microscopy. He also described important concepts like resolution, magnification, numerical aperture etc.

Kaustav Bandyopadhyay did his Ph.D (2010) from Bose Institute Kolkata and then was a Postdoctoral Fellow (2011-12) at Cleveland Clinic Foundation, Ohio, USA followed by The Samuel Roberts Noble Foundation, Oklahoma, USA, until 2016.



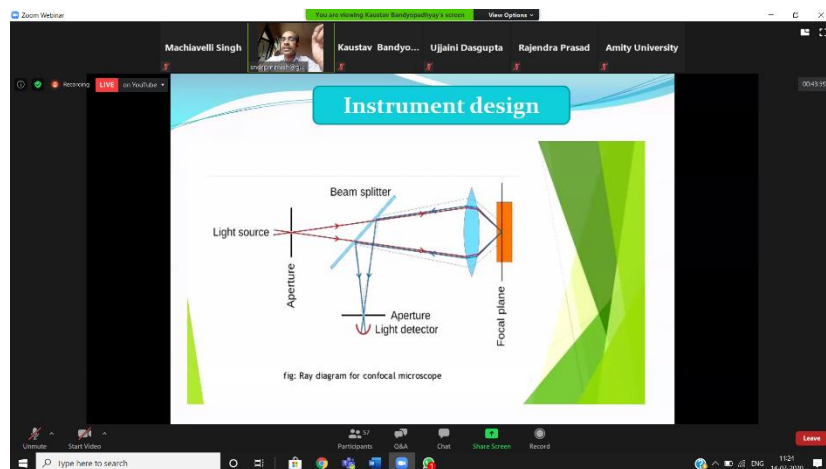


Manish Kumar, Shiv Nadar University

Basics of confocal microscopy (14.07.2020)

This session covered the detailed hardware and optics involved in confocal microscopy. This included concepts like optical sectioning, wavelength scanning, choosing fluorophores. Going beyond the scopes of confocal imaging, the speaker also introduced super resolution microscopes, and modern-day digital camera-based microscopes, which almost work like confocal microscopes.

Manish Kumar did his M.Sc from HNB Garhwal Univ. After a brief period at NCBS, he joined IISc as the Manager of Imaging Facility in 2007. He spent 7 years as the manager of the Core Microscopy Imaging facility at IGIB, New Delhi and recently joined Shiv Nadar University.





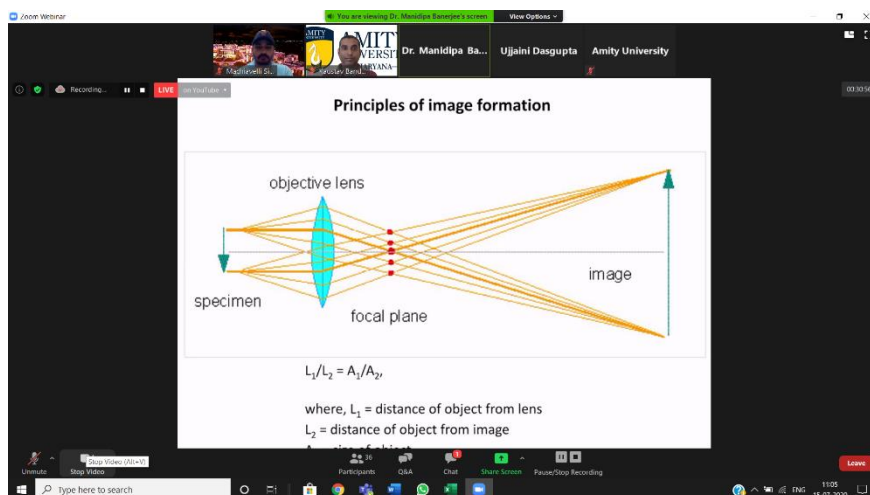
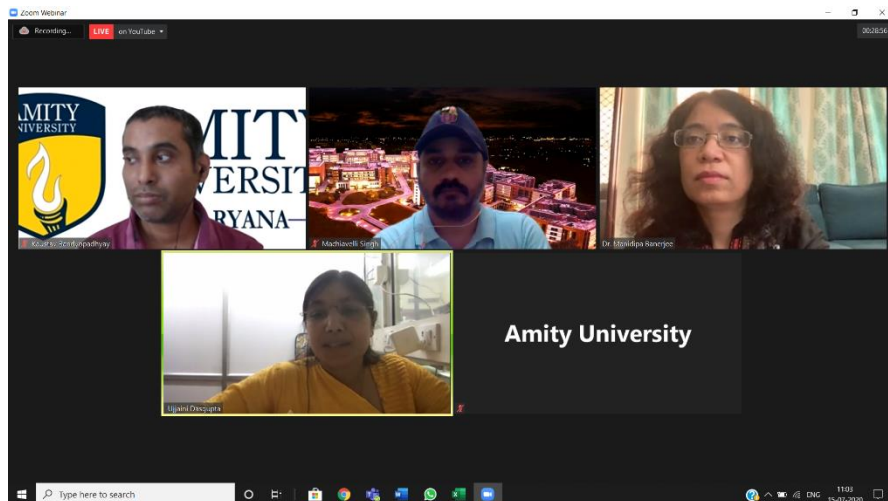
Manidipa Banerjee , IIT Delhi.



Electron microscopy and applications (15.07.2020)

Electron microscopes help us to see tiny details which cannot be resolved by light waves. The speaker took us through a journey in which a scientist can visualize proteins, and viruses. She also described how a 3D structure of a molecule can be solved using cryo-electron microscopy. She also gave a detailed outline of the hardware involved in this sophisticated instrument.

Manidipa Banerjee did her PhD from University of California San Diego, and was a post-doctoral fellow at Scripps Research Institute, La Jolla, California. She joined KSBS at IIT Delhi in 2010. She is the recipient of DBT-Ramalingaswamy reentry fellowship





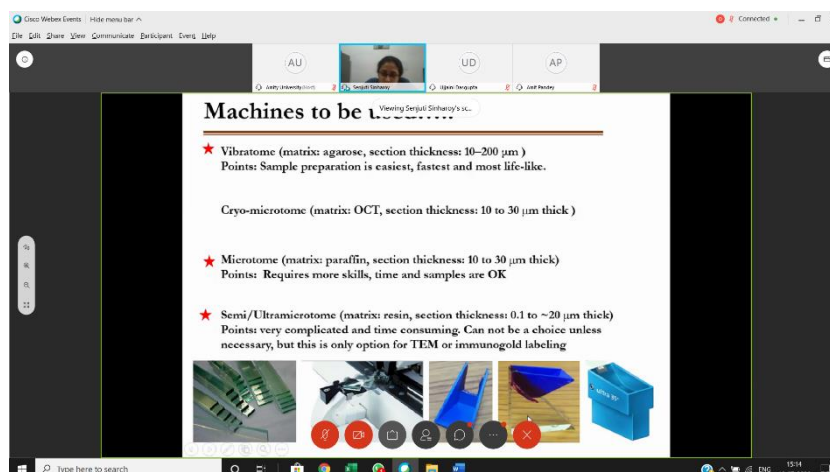
Senjuti Sinharoy, NIPGR, New Delhi.



Working with tissue samples (16.07.2020)

Sample processing is a very important step in any type of microscopy. Working with thick tissue samples is much difficult than working with cells growing in culture. This session included the important steps like fixation, dehydration, clearing, and sectioning which are needed before even entering the microscopy room.

A recipient of DBT Ramalingaswami fellowship, Senjuti sinharoy obtained her PhD from University of Calcutta. She was a postdoctoral fellow at The Noble research Institute, Oklahoma, USA, where she later became a research scientist. At present, she is a staff scientist at NIPGR, New Delhi.





Sheetal Gandotra, IGIB, New Delhi



Advanced microscopic applications (17.07.2020)

This session was all about advanced applications like live cell imaging, FRET, FRAP, co-localization which are versatile tools needed to study cellular morphology and events in molecular details. The speaker also discussed the software involved in these techniques, and the common mistakes made during data interpretation

Sheetal Gandotra is a Scientist from CSIR- IGIB, Delhi. She did her PhD from Weill Cornell Graduate School of Medical Sciences (NYC, USA), followed by post-doctoral training at Cambridge University, UK. She is the recipient of prestigious Swarnajayanti Fellowship

CERTIFICATE OF SUCCESSFUL COMPLETION ISSUED TO ALL PARTICIPANTS:



3. One week Workshop on UPLC and Spectroscopy



Amity Institute of Biotechnology (AIB) / Amity Institute of Integrative Sciences and Health (AIISH) / Central Instrument Research Facility (CIRF),
Amity University Haryana



Organizing
One Week Workshop on
UPLC and Spectroscopy
28th July – 3rd August, 2020



28th July: Basics of Liquid Chromatography & Mass Spectrometry

Mr. Jitesh Thakur and Mr. Hitesh Shrimal, Waters India

29th July: UPLC Technology and advancement

Mr. Jitesh and Mr. Jay Kumar, Waters India

30th July: Spectroscopy tools from Agilent: An Overview

Mr. Partha Sen, Agilent Technologies

31st July: Application of Spectroscopic Tools for Analyzing Molecular Interaction

Dr. Z. A. Zabid, Agilent Technologies

3rd August: The Science behind Fluorescence Spectroscopy

Dr. Sobhan Sen, Jawaharlal Nehru University



Organizers:

Krishna Murari Sinha

Nitai Debnath

Atanu Banerjee

Saurabh Sharma

Special Thanks to

Waters



The workshop schedule was as follows:

28th July (10:30 am) 29th July (10:30 am) 30th July (10:30 am) 31st July (10:30 am) 3rd August (10:30 am)

: Basics of Liquid Chromatography & Mass Spectrometry Mr. Jitesh Thakur and Mr. Hitesh Shrimal, Waters India

:UPLC Technology and advancement, Mr. Jitesh and Mr. Jay Kumar, Waters India

: Spectroscopy tools from Agilent: An Overview Mr. Partha Sen, Agilent Technologies

: Application of Spectroscopic Tools for Analyzing Molecular Interaction Dr. Z. A. Zabid, Agilent Technologies



: Fluorescence Spectroscopy and its Utility in Every Life. Dr. Sobhan Sen, Jawaharlal Nehru University

Objectives of the Event

1. To introduce students and faculties to the state-of-the-art spectroscopy and UPLC equipment.
2. To make them well versed with the functioning and applications of the techniques.

Brief about the address/talk of speakers

The workshop had three components:

- Introduction to liquid chromatography technology by personnel from Waters India, the pioneer of UPLC technology India. Besides introducing to the basic fundamentals behind liquid chromatography and mass-spec technology, they provided an exhaustive overview of the UPLC system installed at the CIRF. The application scientists from Waters also provided insights into the applications of LC technology as well as the software system on which the UPLC system is built on. Waters India agreed to provide Hands-on training sessions when the university reopens.
- The Spectroscopy component of the workshop included introduction to the fundamentals of spectroscopy techniques including, UV-VIS, Fluorescence, FT-IR, NIR spectroscopy as well as its applications by scientists from Agilent technologies, the global leaders in the development of spectroscopy instruments. The team also introduced participants to the working principle of all the instruments. The company agreed to provide Hands-on training sessions with all the Agilent spectroscopy equipments housed at the CIRF when the university reopens.
- From the academia, Dr. Sobhan Sen of School of Physical Sciences, JNU provided a comprehensive overview of the fluorescence spectroscopy technique and recent instrumental advancements based on the particular technique. Since, biological research is heavily dependent on fluorescence spectroscopy based microscopic techniques, Dr. Sen provided the fundamental knowledge required for utilizing these techniques.

Photographs

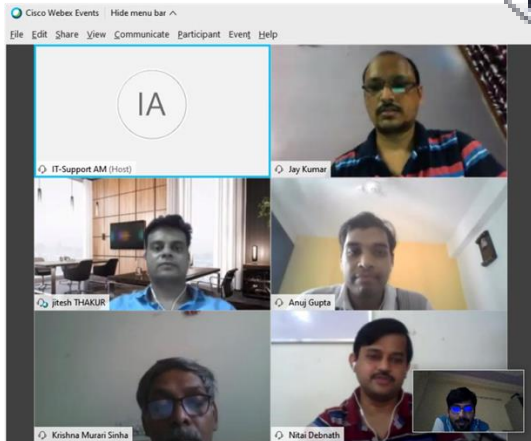


Image 1: Organizers and scientists from Waters India

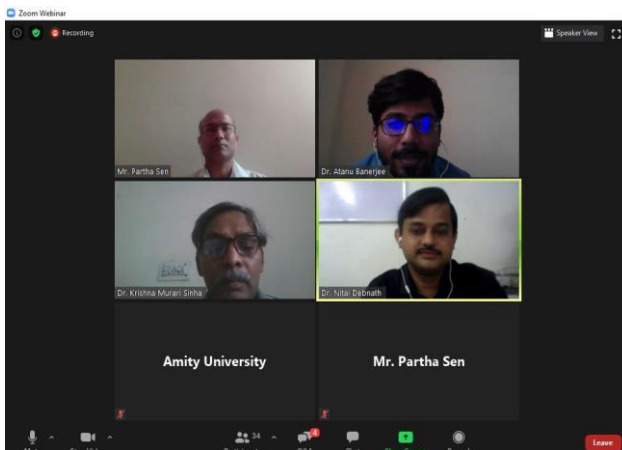


Image 2: Mr. Partha Sen from Agilent technologies delivering the lecture

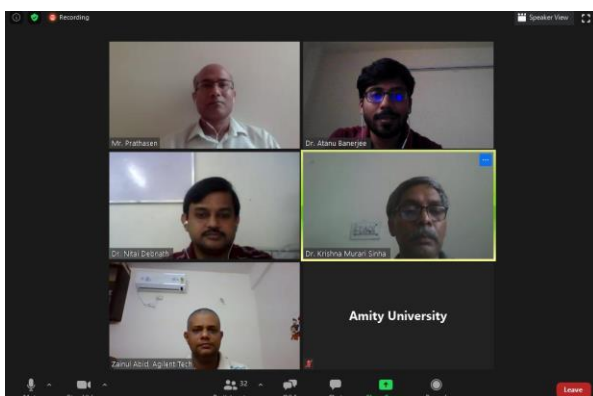


Image 3: Organizers and scientists from Agilent technologies

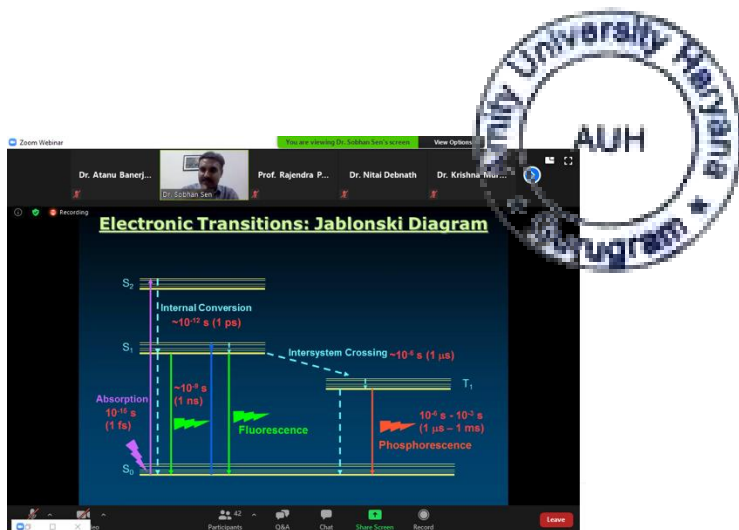


Image 4: Dr. Sobhan Sen from JNU, delivering his lecture

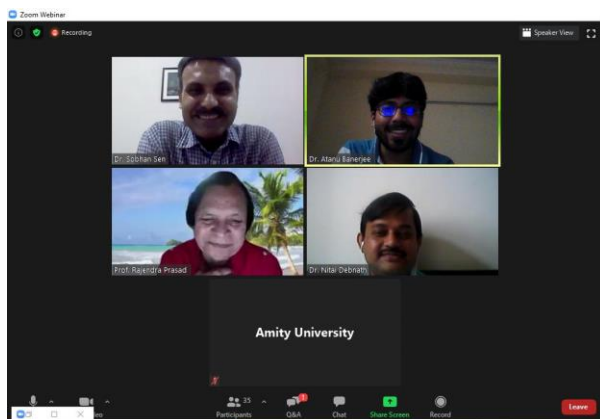


Image 5 : Organizers and Dr. Sobhan Sen from JNU

CIRF Staff

- 1. Mrs. Kanchan Pandey, Manager CIRF.**
- 2. Mr. Saurabh Brahmhat, Technical Officer.**
- 3. Mr. S.M. Haseeb Faheem, Technical officer.**

Email: auhcirf2019@gmail.com

CIRF Web site: <https://www.amity.edu/gurugram/central-instrument-research-facility.aspx>

Contact no. 8896113786, 7275274802

Central Instrument Research facility(CIRF)

2nd floor Academic Block-A

Amity Institute of Biotechnology

Amity Institute of integrative Science & Health.

Amity University of Haryana-122413



AMITY UNIVERSITY

AMITY UNIVERSITY
AUH
HARYANA
Gurgaon

MILITARY TRAINING CAMPS





“**ARISE AWAKE AND STOP NOT
TILL THE GOAL IS REACHED**”

SWAMI VIVEKANAND

In accordance with the National Youth Policy the youth of the country should spend one fifth of the time spent in an educational institution on out door activities. In keeping with the National Policy our Founder President Dr. Ashok K. Chauhan has Institutionalized Military Training for under and post graduate students of all Amity Universities.

The objectives of the Military Training are:

- Instill leadership qualities.
- Inculcate discipline.
- Evoke national spirit.
- Kindle a spirit of adventure.
- Make students aware of the contribution of Armed Forces in nation building.
- Role of Armed Forces in Disaster Management.



AIM

THE AIM OF MILITARY TRAINING IS TO INCULCATE LEADERSHIP QUALITIES AND DISCIPLINE AMONGST AMITY UNIVERSITY STUDENTS

MILITARY TRAINING - AUH

SCOPE

- Bring about an awareness of students to the importance of leadership
- Inculcate discipline & camaraderie amongst students
- kindle spirit of adventure
- To expose students to the essence of physical well being & Fitness
- Enhance awareness regarding indian defence forces & disaster management



MILITARY TRAINING - AUH

DURATION: UG- 5 Days, PG - 6 Days

LEADERSHIP CAPSULE.

BASIC KNOWLEDGE INDIAN ARMED FORCES.

- Interactive Session on Leadership Skills
- Importance of Communication Skills
- Patriotism and National Character
- Basic knowledge of the armed forces & role of armed forces in nation building
- Introductory talk on disaster management

ADVENTURE TRAINING

- Para Sailing
- Rock Climbing
- Rappeling
- Zorbin Ball

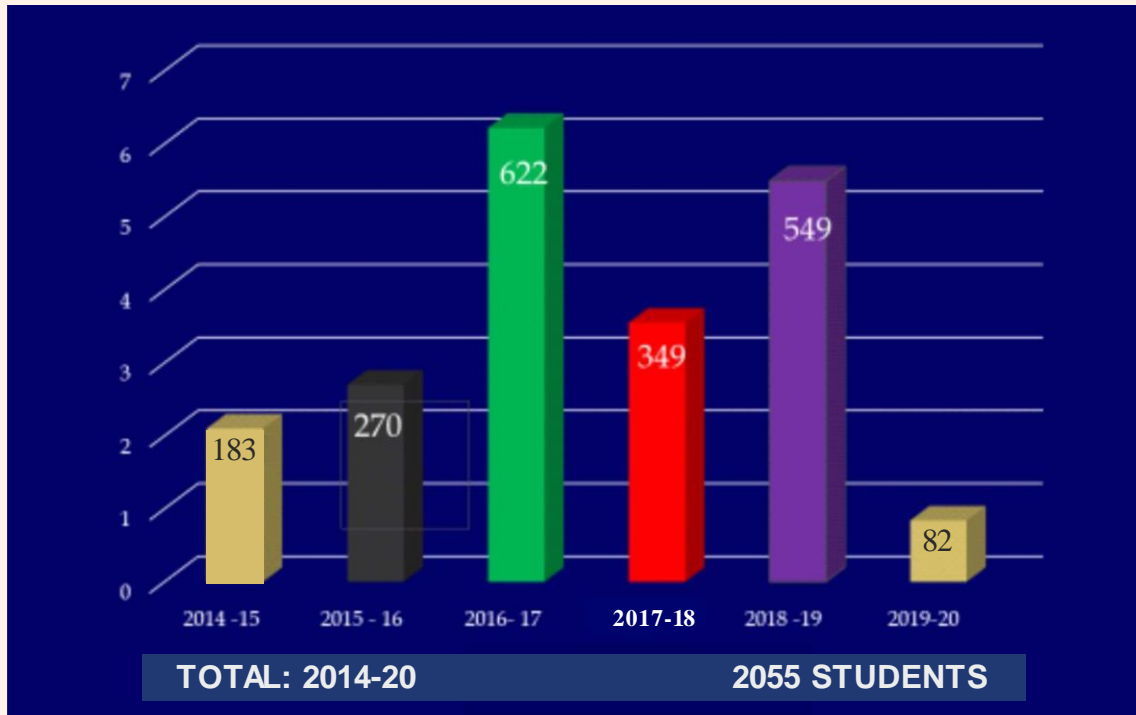
MILITARY TRAINING

- PT.
- Drill
- Obstacle Crossing
- Weapon Firing
- Basics of First Aid
- Basic Knowledge of Fire Fighting



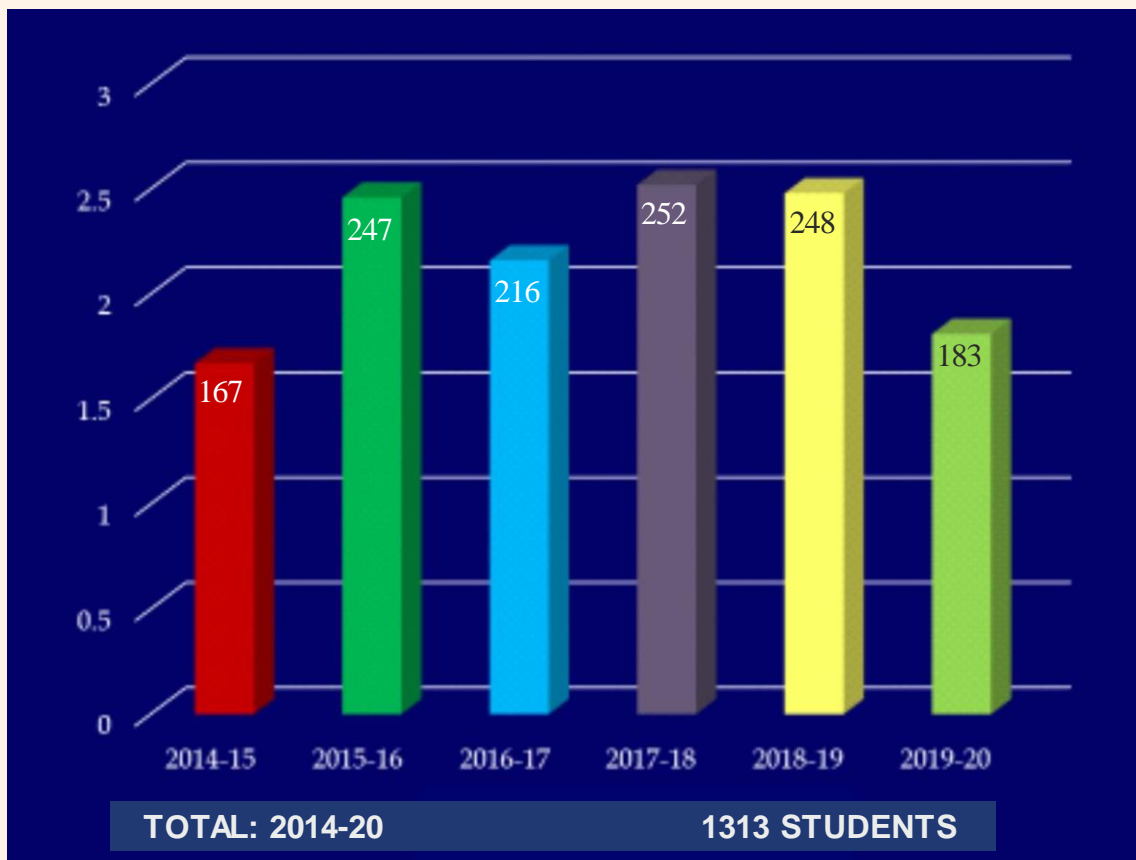
AUH UNDER - GRADUATE STUDENTS

ATTENDED MTC 2015-2020



AUH POST - GRADUATE STUDENTS

ATTENDED MTC 2015-2020





LEADERSHIP





MILITARY TRAINING

DRILL

OBSTACLE CROSSING

AIR RIFLE FIRING



DRILL

OUTCOME

Discipline | Bearing and Poise | Mind & Body Coordination

MARCHING - PASSING OUT PARADE





AWARDS AT PASSING OUT PARADE





OBSTACLE CROSSING

OUTCOME

Physical Fitness | Mind & Body Coordination | Self Esteem and Confidence

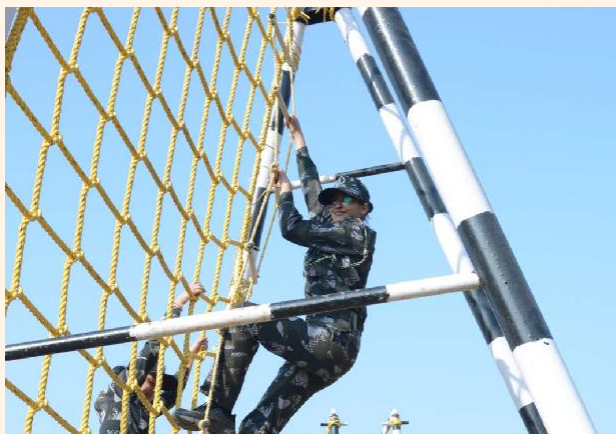
CROSSING 7 FT WALL



BURMA BRIDGE



ROPE WALL





MONKEY ROPE



PULL UP BAR



TUNNEL CROSSING





CROSSING 9 FT DITCH



BALANCING BEAM





FIRING AIR RIFLE AT THE SMALL ARMS RANGE





ADVENTURE TRAINING

OUTCOME

Kindle Spirit of Adventure | Overcome Fear of Heights | Self Esteem and Confidence

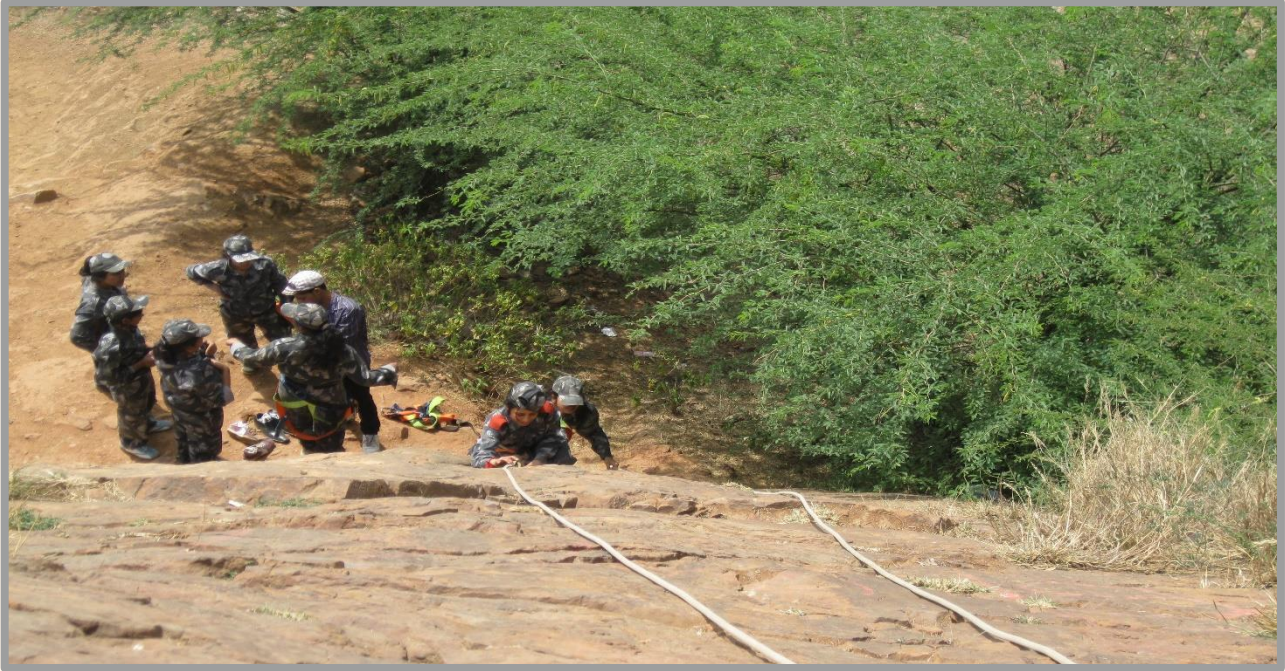
PARA SAILING





ADVENTURE TRAINING

ROCK CLIMBING



RAPELLING





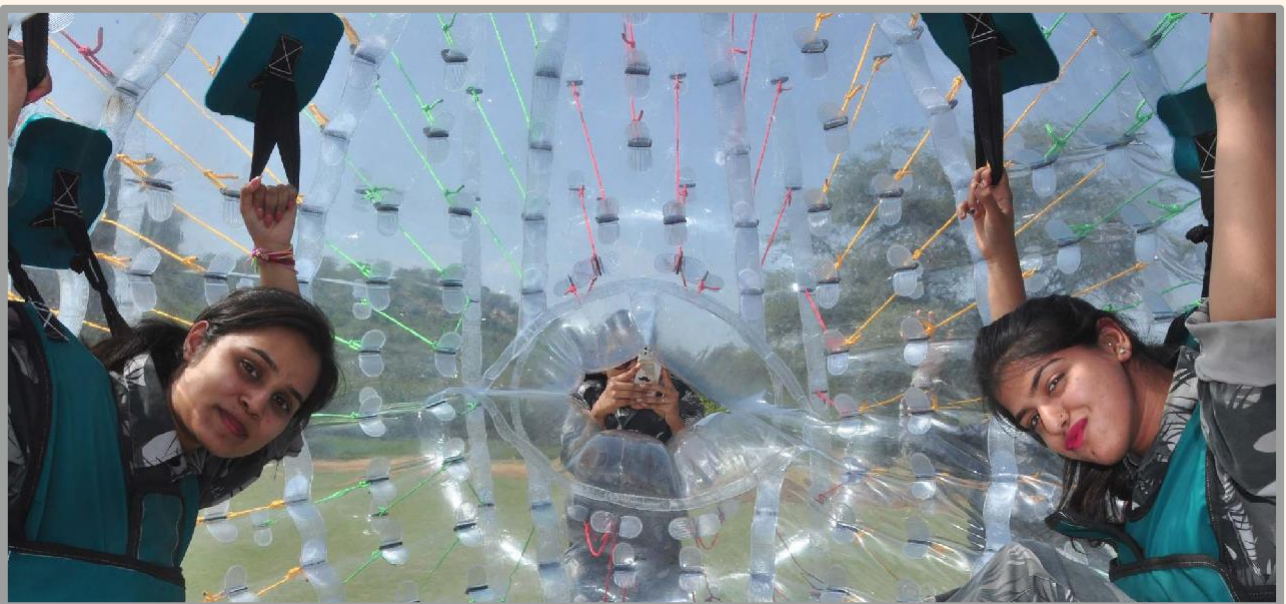
TEAM BUILDING ACTIVITIES



TUG OF WAR



STRAPPED INSIDE A ZORBIN BALL



ZORBIN BALL





LIFE AT THE CAMP

MILITARY CAMP



TENTED LIVING ACCOMODATION





LIFE AT THE CAMP

STUDENTS HAVING LUNCH AT THE CAMP MESS



END OF CAMP SOCIAL EVENING





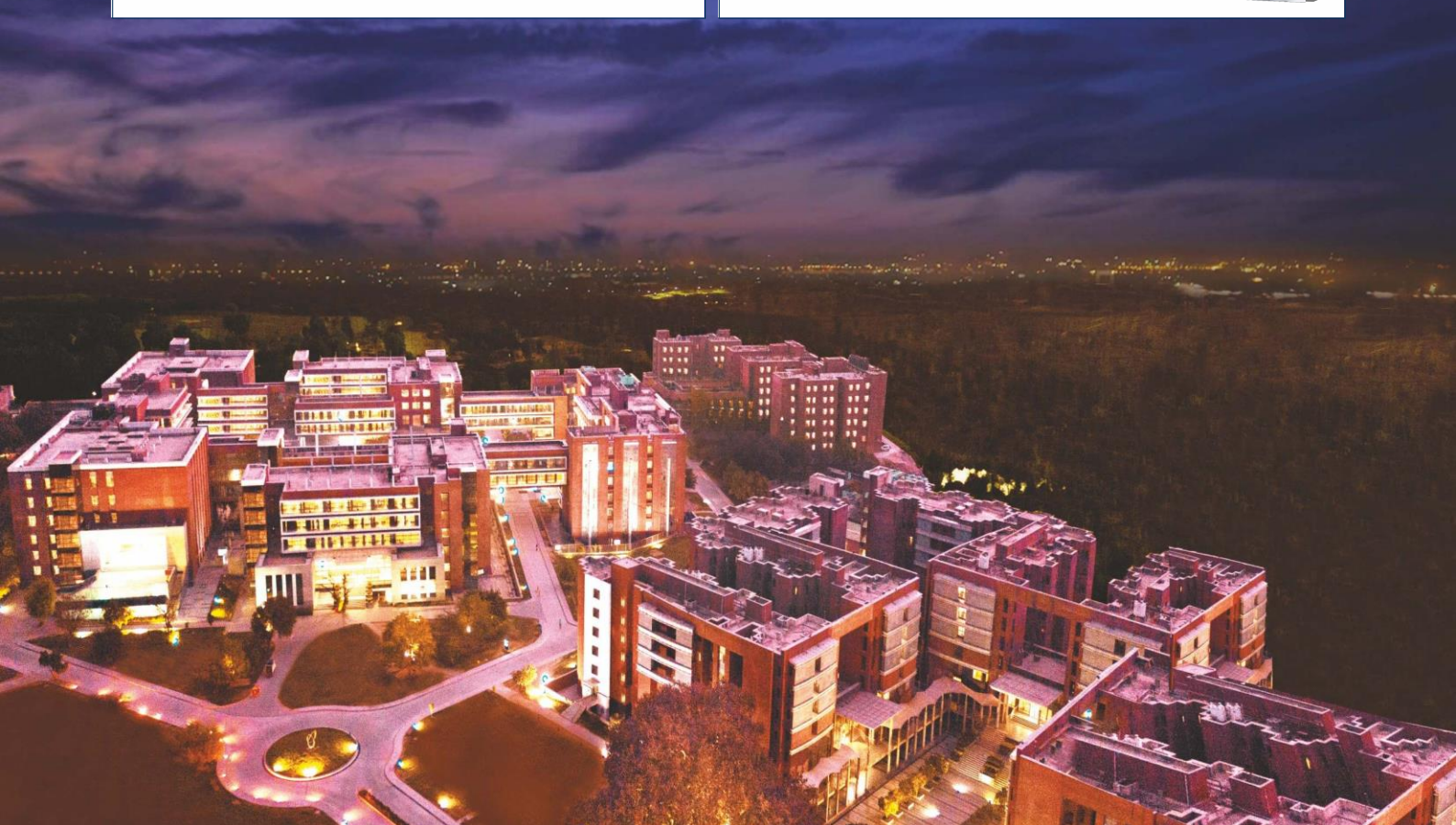
EXPERIENCE A CAMPUS LIFE THAT INSPIRE YOU TO DREAM BIG

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- Hi-Tech Labs equipped with latest infrastructure.
- Secure Campus with latest IP enabled 24X7 CCTV Surveillance.
- 20 Acres Sports Complex with latest amenities.
- On-Campus Departmental Store, Salon, ATM, Laundry Service, Gym & Food Courts like Café Coffee Day, Dosa Plaza etc.

AMITY UNIVERSITY HARYANA
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TOP 3 PRIVATE UNIVERSITIES
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Directorate of Outcome
Outcome Report(Event/Activity Organized @ AUH)

1. General Information

Date: 16th and 17th May 2019
Event Type: GLP
Event Title: Train the Trainer Programme on Good Laboratory Practice
Venue: D Block Conference Hall
Organized by(School): ASAS
Student Participation*: NIL
Faculty Participation*: 32
Participation from outside AUH*: NIL
Event Coordinator(s) with designation: Dr. Seema Pathak, HOD, CBFS
Details of Expert/Speaker/Resource Person/Judge:

SN	Country Name	Expert Name	Organization Name	Designation	Specialization	Contact No.	E-mail Id	Address	Major Areas where Amity can Collaborate with expert	CV of Expert (Yes/No)
1	India	Dr. Neeraj Sharma	DST	Scientist 'G' and Head, (NGCMA) DST				DST, Delhi	R & D	Yes
2	India	Dr. Ekta Kapoor	DST	Scientist 'E', (NGCMA) DST				DST, Delhi	R & D	Yes
3	India	Dr Sharad Sharma	CSIR-Central drug research institute Lucknow	Senior Principal Scientist & Incharge-Toxicology & experimental medicine				CSIR-Central drug research institute Lucknow	R & D	Yes
4	India	Prof. Diwan singh rawat	Dept. of chemistry, Delhi university	Professor	Medicinal Chemistry	09810 23230 1	dsrawat@chemistry.du.ac.in	Dept. of chemistry, delhi university	R & D	Yes
5	India	Dr. K.sadasivan Pillai		Consultant					R & D	Yes

2. Outcome of the Event with Time Lines (Proposed/Achieved)

Envisaged Outcome	Tangible/Intangible	Achieved/Proposed	Target date & responsibilities (if proposed)	Details of outcome
1. Outcome related to Academia Connect				
a) Collaborations for Research Papers / Conference Papers/ Book Chapter etc.	Tangible	To train the Trainer/Faculties For GLP	Dr. Neeraj sharma appreciate the proposal of starting one or two credit course on GLP for UG and PG students as skill development or certificate course.	Certificates were provided to all the faculties by DST/ Govt. of India
b) Collaborations & MOU for Research Guidance [PhD, PG & UG (summer training, Dissertation)] & Projects/Use of Instruments etc.	Tangible			
c) Collaboration for Funded Projects	Tangible			
2. Outcome related to Industry Connect				
a) Placement				

b) Collaborations for Research Papers				
c) Collaborations & MOU for Research Guidance [PhD, PG & UG (summer training, Dissertation)] & Projects/Use of Instruments				
d) Collaboration for Funded Projects				
3. Outcome related to Society Outreach				
a) Benefit to society in terms of Health & Hygiene				
b) Benefit to society in terms of Education	<i>Tangible</i>			
4. Outcome related to Students Learning & Grooming				
5. Any other				



Department of Chemistry, Biochemistry and Forensic Science, Amity School of Applied Sciences (ASAS), Amity University Haryana organized a training program with National Good Laboratory Practice Compliance Monitoring Authority (NGCMA) Department of Science and Technology, Govt. of India.

The two days training program called "**Train the Trainer Programme**" on Good Laboratory Practices was held on 16 -17th May 2019 at AUH campus. The training program was one of its kind organized by any private university across the country, therefore making it even more special. Total nine sessions were conducted during the two days programme.

The first day event started with opening remarks by Honorable Pro. V C Madam **-Dr. Padmakali Banerjee**, sharing her enlightening words. She proposed to include the DST monitored GLP program in the Skill Basket of AUH.

On second day, Honorable Vice Chancellor Prof. P. B. Sharma graced the occasion and shared his words of wisdom by addressing the gathering . He brought the focus of the trainees and mentioned the need of GLP in present scenario. He also shared few examples from his experiences in the past and made aware how tests should be performed properly and honestly.

The inaugural speaker Dr. Neeraj Sharma , is the scientist "G" and Head – National Good Laboratory Practice Compliance Authority (NGCMA), DST. Other distinguish speakers were Dr. Ekta Kapoor , Dr. Shard Sharma, Prf. D. S. Rawat and Dr. P Uday Kumar.

3. Event Report along with glimpses of the event *(Photographs)*

3.1 General Introduction of the Event

Department of Chemistry, Biochemistry and Forensic Science, Amity School of Applied Sciences (ASAS), Amity University Haryana jointly organized a two days training programme called "**Train the Trainer Programme**" on Good Laboratory Practices was held on 16 -17th May 2019 at AUH campus with department of Science and Technology - National Good Laboratory Practice compliance Monitoring Authority (Govt. Of India) with senior scientists and professor, Dr. Neeraj Sharma , scientist "G" and Head – National Good Laboratory Practice Compliance Authority (NGCMA), DST. He highlighted that AUH is the first university in india to start GLP programme in collaboration with DST. Dr. Ekta Kapoor , Scientist 'E', (NGCMA) DST, Dr. Shard Sharma, Senior Principal Scientist & Incharge- Toxicology & experimental medicine, CSIR- Central drug research institute Lucknow, Prof. D. S. Rawat, Department of chemistry, Delhi university, and Dr. K.sadasivan Pillai, Consultant.

3.2 Objectives of the Event

The objective of the programme was to talk about Regulatory Toxicology, Good laboratory Practice (GLP) and its benefits, Applicability of GLP, Genesis of NGCMA and its journey to full adherent “ to MAD” status, Activities of NGCMA, GLP inspections and conclusions of the same.



3.3 Brief about the address/talk of speakers

Dr. Neeraj Sharma shared his word of wisdom by giving the details about the need of this program. As per him, this program has been designed to provide proper training for students to get more employability. In future AUH students of B.Sc. and M.Sc. , across all the courses of ASAS will be able to get this training. However the training received by faculties from this program will volunteer to train.

Dr. Ekta Kapoor DST elaborated the Good laboratory Practices , their advantages , how and where the GLP is applicable and the Certification of the same in India. She emphasized on sensitization and training the trainers. She also talked about the genesis, achievements and importance of such programs in India. Further, she spoke about the GLP compliance for labs, their certification and monitoring their regular evaluation. As per her, GLP focuses on nonclinical health and environmental safety studies, which are planned, performed, monitored, recorded, archived and reported. She also talked about the applicability of GLP.

Dr. Sharad Sharma is a certified trainer OECD, NGCMA , in his session he discussed about the five points programme i.e. resources, characterization, rules protocols/study plans, results and quality assurance. He also elaborated the ten principles of GLP.

Dr. Diwan Singh Rawat’s session was about Test Facility Management & Study Director: Role and Responsibilities . He also discussed about the timeline for archival, how to write a report , calibration, frequency of calibration and relevancy of manuals for writing Standard Operating Procedures (SOPs).

Dr. Sharad Sharma took the next session, where he spoke about how to write SOPs, as per him good SOP means good data quality. He mentioned the main purpose of SOP is to minimize the variability from person-to-person and test-to-test.

Prof. Diwan Singh Rawat, delivered the next talk, in which he explained about test item, delivered Reference Item and test system Calibrated glassware and recorded in SOP. As per him, each test and reference item should be characterized/identified (e.g. CAS, Code etc). There must be accountability, retention period of test or control item in archives, archiving test item and common problems. He also gave an example of synthesis of Aspirin and problem related to mentioning the procedure in the SOP.

Dr. K. Sadasivan Pillai – Consultant , with topics like Conduct of GLP Study: Study Plan, Raw Data, Study Report. In his talk he had detailed discussion about study plan, study conduct, study plan amendment, study plan deviation, raw data, raw data digit-tips, recording-tips, correcting-tips. He also talked about the relationship between Accuracy and Precision, Bias and Accuracy, Error vs. Uncertainty, Arcsine Transform/Logistic Regression, Data Integrity and finally he explained ALCOA (Attributable, Legible, Contemporaneous, Original and Accurate). He also mentioned 7 sins in recording.

Last session was also taken by him on Archiving in a GLP environment, where he spoke about the key player in GLP, Management responsibilities, Study Directors responsibilities, who is the central point if the study control. He also went through the GLP principles one more time and correlated all the discussion with each and every points.

- 3.3 Photographs with caption (*also share high resolution files of photographs*)
- 3.4 Scanned copy of attendance sheets
- 3.5 Few Scanned feedback forms of participants




 GOVERNMENT OF HARYANA
 DEPARTMENT OF SCIENCE AND TECHNOLOGY
 NATIONAL GOOD LABORATORY PRACTICE COMPLIANCE MONITORING AUTHORITY
Train the Trainer Programme on Good Laboratory Practice

Amity University, Amity Education Valley Gurgaon, Manesar, Panchgaon, Haryana 122413

May 16&17, 2019

Time: 08:30 HRS - 17:30 HRS

Program Agenda

Time	Topic	Speaker
09:30 – 10:00 HRS	Registration	Amity University
10:00 – 10:10 HRS	Welcome address	Amity University
10:10 – 10:30 HRS	Opening Remarks	Dr. Neeraj Sharma , Scientist 'G' & Head, National Good Laboratory Practice Compliance Authority (NGCMA), DST
10:30 – 10:40 HRS	Introduction	All
10:40 – 11:00 HRS	Group Photograph & Networking Tea	
11:00 – 11:50 HRS	Introduction to GLP, Genesis of NGCMA & Achievements made	Dr. Ekta Kapoor , Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST
11:50 – 12:40 HRS	OECD Principles of GLP	Dr. Sharad Sharma , Senior Principal Scientist and Incharge-Toxicology & Experimental Medicine, CSIR-Central Drug Research Institute, Lucknow
12:40 – 13:30 HRS	Test Facility Management & Study Director: Roles and Responsibilities	Prof. Diwan Singh Rawat , Chemistry Department, Delhi University
13:30 – 14:15 HRS	Lunch	
14:15 – 15:00 HRS	Standard Operations Procedures	Dr. Sharad Sharma , Senior Principal Scientist and Incharge-Toxicology & Experimental Medicine, CSIR-Central Drug Research Institute, Lucknow
15:00 – 15:50 HRS	Test and Reference Items	Prof. Diwan Singh Rawat , Chemistry Department, Delhi University
15:50 – 16:00 HRS	Tea & Closing of Day 1	

DAY 2: MAY 17, 2019



Time	Topic	Speaker
10:00 – 10:50 HRS	Conduct of a GLP Study: Study Plan, Raw Data, Study Report	Dr. K.Sadasivan Pillai, Consultant
10:50 – 11:40 HRS	Quality Assurance Unit: Roles and Responsibilities	Dr. Ekta Kapoor , Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST
11:40 – 12:00 HRS	Networking Tea	
12:50 – 13:30 HRS	Key players in GLP Set-up	Dr. Ekta Kapoor , Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST
13:30 – 14:00 HRS	Lunch	
14:00 – 14:40 HRS	Archiving in a GLP Environment	Dr. k.Sadasivan Pillai, Consultant
14:40 – 15:00 HRS	Concluding remarks & Certificate distribution	All
15:00 – 15:20 HRS	Tea	



Happy Learning

SOME GLIMPSES OF DAY 1



SOME GLIMPSES OF DAY 2



Biodata



Dr. Ekta Kapoor works as Scientist 'E' in the Department of Science and Technology, Government of India and a full time GLP Inspector of National Good Laboratory Practice Compliance Monitoring Authority (NGCMA) of India. She is a Registered Pharmacist in Pharmacy (Pharmacology).

Dr. Kapoor has over a decade of experience in GLP compliance monitoring and is a 'Lead Inspector' of NGCMA. The committed and sustained efforts of Dr. Kapoor led to the quantum growth and visibility of NGCMA and its activities. She had been instrumental in the rigorous exercise for attaining India a full adherent status to 'Mutual Acceptance of Data' (MAD) in the OECD's Working Group on GLP. Dr. Kapoor represents India in the meetings of the OECD Working Group on GLP. She conducted the On-Site Evaluation of GLP Programme of Canada as a team leader and is a member of the evaluation team for On-Site Evaluation of Thailand & Japan.

Dr. Neeraj Sharma SCIENTIST 'G' & HEAD (Current)

Technology Development, Patent Facilitation, Drugs & Pharmaceutical Research, State S&T Councils, National Good Laboratory Practices Compliance and Monitoring Authority (NGCMA) and Policy Research in Science & Technology

Additional Charge: Secretary, Technology Development Board, DST, Ministry of S & T, GoI.

Sir has served Government of India for more than 28 years. And is Member in Committees:-

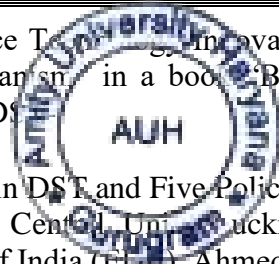
- Technology Mission for Indian Railways (TMIR)
- Apex Committee of BIRAC (Bio-Technology Industry Research Assistance Council), Deptt of Bio Technology, GoI

Ø Inter-ministrial S&T Advisory Committees and has represented the Department at the highest levels s.a: PMO, Cabinet Secretariat, Planning Commission, Ministry of Finance in the capacity of an Advisor and In-Charge of Planning & Coordination Cell in DST since 2006.

Sir has DOCUMENTED AND PUBLISHED various Reports s.a:

1. Annual Plan documents (2006-07 to 2013-14)
2. Five Year Plans (2007-2012) & (2012-2017)
3. Mid Term Appraisals of five year plans
4. Strategic Plan for DST (2012-17)
5. Science, Technology & Innovation Policy 2013
6. Annual Action Plan of DST
7. 11th Plan Achievements of the Department
8. Assisted in Publication and releasing of book on "The Innovators: The Entrepreneurs"

9. Co-authored a chapter entitled “Science Technology and Innovation Policy Research: An Approach to Strengthen Evidence Gathering Mechanism in a book “Bridging the Science-Policy Gap for Inclusive Growth in India” published by DST.



He has curated Policy Research Division in DST and Five Policy Research Centres at IITDelhi, IISc Bangalore, Baba Bhim Rao Ambedkar Centre, Durgam Cheruvu, Hyderabad, Punjab Univ.Chandigarh and Entrepreneurship Development Institute of India (EDI), Ahmedabad. To name a few.....

ACCOMPLISHMENTS & RECOGNITIONS:

Ø Dr. Neeraj Sharma, has delivered Talks and Discussions on the Science Technology and Innovation Policy in the All India Radio, New Delhi

Ø Chaired an OECD meeting at their Head Quarters in Paris, France on GLP Programme

Ø Dr. Neeraj Sharma has worked as a Head of Technology Development Group which included Clean Energy and Water Technology Missions, Technology Systems Development Programme, Instrumentation Development Programme, Drugs and Pharmaceutical Research Programme, State Science and Technology Programme, Science and Technology Advisory Committees, Good Laboratory Practices.


Ø Sir has promoted science and technology based entrepreneurship through supporting and scaling of innovations and helped converting Innovations to more than 20,000 start-ups.

Ø Sir has been instrumental in initiating Swarnajayanti Fellowships, for bright young scientists which eventually became flag bearers of Indian S&T research output.



Faculty Details for Professor for UGC Web-site



Title	Professor	Diwan	S	Rawat	Photograph 
Designation	Professor				
Address	Department of Chemistry, University of Delhi, Delhi-110007				
Phone No	Office 27667501; 27667794; Ext 177				
Residence	Provost Lodge, Jubilee Hall, University of Delhi, Delhi-110007				
Mobile	011-27667276 09810232301				
Email	dsrawat@chemistry.du.ac.in diwansrawat@gmail.com				
Web-Page	http://www.du.ac.in/faculty_member_details.htm?id=1792 www.diwansrawat.webs.com				
Educational Qualifications					
Degree	Institution			Year	
Ph.D.	Central Drug Research Institute, Lucknow, UP/Kumaun University, Nainital, UK			1998	
M.Phil. / M.Tech.	NA				
PG	Kumaun University, Nainital, UK			1993 (First Position in the University)	
UG	Kumaun University, Nainital, UK			1991	
Any other qualification					
Career Profile					
<ul style="list-style-type: none"> • Professor, Department of Chemistry, University of Delhi, Delhi, 110007, India (March 2010-Till Date). • Associate Professor, Department of Chemistry, University of Delhi, Delhi, 110007, India (July 2006-March 2010). • Reader, Department of Chemistry, University of Delhi, Delhi, 110007, India (July 2003-July 2006). • Assistant Professor, Department of Medicinal Chemistry, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, Punjab, India (Nov 2002-July 2003). • National Institute of Health (NIH) Postdoctoral Fellow, Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN, USA (Sept 2001-Nov 2002). • American Cancer Society (ACS) Postdoctoral Fellow, Department of Chemistry, Indiana University, Bloomington, IN, USA, (Nov 1999-Sept 2001). • Scientist, R & D Department, Lupin Laboratories Ltd. Mandideep, M.P., India (Sept 1998-Nov1999). Involved in the process and development of Lisinopril, quinalapril based antihypertensive drugs, and handled reaction on 50 kg scale. 					

Attendance sheet

Participants for Train the Trainer program on GLP organised by AUH & DST



Sr. No	Name	School/Department	Signature/Attendance
1	Prof. Seema R. Pathak	Amity School of Applied Sciences- ASAS/Chemistry, Biochemistry, Forensic Sciences	Seema
2	Prof. Joydeep Datta	ASAS/Chemistry, Biochemistry, Forensic Sciences	Joydeep
3	Dr. Sudip Majumder	ASAS/Chemistry, Biochemistry, Forensic Sciences	Sudip Majumder
4	Dr. Manika Vats	ASAS/Chemistry, Biochemistry, Forensic Sciences	Manika Vats
5	Dr. Rakesh Kumar	ASAS/Chemistry, Biochemistry, Forensic Sciences	Rakesh
6	Dr. Debasree Ghosh	ASAS/Chemistry, Biochemistry, Forensic Sciences	D. Ghosh
7	Dr. Dipi Vaya	ASAS/Chemistry, Biochemistry, Forensic Sciences	Dipi Vaya
8	Dr. Pooja Rawat	ASAS/Chemistry, Biochemistry, Forensic Sciences	Pooja Rawat
9	Dr. Varun Rawat	ASAS/Chemistry, Biochemistry, Forensic Sciences	Varun Rawat
10	Dr. Gyanishwari Kumar Rao	ASAS/Chemistry, Biochemistry, Forensic Sciences	Gyan Rao
11	Dr. Anurag Sharma	ASAS/Chemistry, Biochemistry, Forensic Sciences	Anurag Sharma
12	Dr. Manish Shandilya	ASAS/Chemistry, Biochemistry, Forensic Sciences	Manish Shandilya
13	Mr Ravi Bhatti	ASAS/Chemistry, Biochemistry, Forensic Sciences	Ravi Bhatti
14	Dr. Bhavneesh Yadav	ASAS/Chemistry, Biochemistry, Forensic Sciences	Bhavneesh Yadav
15	Dr. Richa Rohate	ASAS/Chemistry, Biochemistry, Forensic Sciences	Richa Rohate
16	Mr. Gurvinder Singh Bamzrah	ASAS/Chemistry, Biochemistry, Forensic Sciences	Gurvinder Singh Bamzrah
17	Dr. Komal Yadav	ASAS/Chemistry, Biochemistry, Forensic Sciences	Komal Yadav
18	Prof. A.M. Gupta	ASAS/Polymer Technology Center	A.M. Gupta
19	Dr. Charan Mohan Srivastava	ASAS/Polymer Technology Center	Charan Mohan Srivastava
20	Dr. Anugam Vyas	ASAS/Physics	Anugam Vyas
21	Dr. Ayana Baatari	ASAS/Physics	Ayana Baatari
22	Dr. Chandler Saekhar	ASAS/Physics	Chandler Saekhar
23	Dr. Sunita Negi	ASAS/Physics	Sunita Negi
24	Dr. Aakush VJ	ASAS/Physics	Aakush VJ
25	Dr. Shalendra Kumar	ASAS/Physics	Shalendra Kumar
26	Dr. Abhinav Dubey	ASAS/Physics	Abhinav Dubey
27	Prof. Preeti Thakur	ASAS/Physics	Preeti Thakur
28	Dr. Sanjeer Kumar Chauhan	ASAS/Physics	Sanjeer Kumar Chauhan
29	Dr. Jyotsna Sharma	ASAS/Physics	Jyotsna Sharma
30	Dr. Zeeshan Fatima	Amity Institute of Biotechnology	Zeeshan Fatima
31	Dr. Asim	Amity Institute of Pharmacy	Asim
32	Prof. Atul Thakar	Amity Institute of Nanotechnology	Atul Thakar

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Directorate of Outcome
Outcome Report(Event Organized @ AUH)

4. General Information

Date: 10th and 11th June 2019

Event Type: GLP

Event Title: Sensitization seminar on Good Laboratory Practice for Students

Venue: B Block Auditorium

Organized by(School): ASAS

Student Participation*: 67

Research Scholar Participation*: 10

Lab Staff Participation* : 6

Total Strength* : 83

Participation from outside AUH*: NIL

Event Coordinator(s) with designation: Dr. Seema Pathak, HOD, CBFS

Details of Expert/Speaker/Resource Person/Judge:

SN	Country Name	Expert Name	Organization Name	Designation	Splzn	Contact No.	E-mail Id	Address	Major Areas where Amity can Collaborate with expert	CV of Expert (Yes/No)
1	India	Dr. Neeraj Sharma	DST	Scientist 'G' and Head, (NGCMA) DST				DST, Delhi	R & D	Yes
2	India	Dr. Ekta Kapoor	DST	Scientist 'E', (NGCMA) DST				DST, Delhi	R & D	Yes
3	India	Dr. K. Sadasivan Pillai		Consultant					R & D	Yes
4	India	Prof. Diwan Singh Rawat	Dept. of Chemistry, Delhi University	Professor	Medicinal Chemistry	09810232301	dsrawat@chemistry.du.ac.in	Dept. of Chemistry, Delhi University		
5	India	Dr. P. Uday Kumar	National Institute of Nutrition, Hyderabad	Scientist 'G'				National Institute of Nutrition, Hyderabad	R & D	Yes

5. Outcome of the Event with Time Lines (Proposed/Achieved)

Envisaged Outcome	Tangible/Intangible	Achieved/Proposed	Target date & responsibilities (if proposed)	Details of outcome
6. Outcome related to Academia Connect				
d) Collaborations for Research Papers/Conference Papers/ Book Chapter etc.	Tangible	To Train the students for GLP and inculcate the set of regulations designed to substantiate the consistency of lab experiments. To ensure the quality and reliability of test data of their	Dr. Neeraj Sharma appreciated the proposal of starting one or two credit course on GLP for UG and PG students as skill development or certificate course.	Certificates were provided to all the students, Research Scholar and Lab staff by DST, Govt. of India.



		exp	
e) Collaborations & MOU for Research Guidance [PhD, PG & UG (summer training, Dissertation)] & Projects/Use of Instruments etc.	Tangible		
f) Collaboration for Funded Projects	Tangible		

7. Outcome related to Industry Connect

e) Placement			
f) Collaborations for Research Papers			
g) Collaborations & MOU for Research Guidance [PhD, PG & UG (summer training, Dissertation)] & Projects/Use of Instruments			
h) Collaboration for Funded Projects			

8. Outcome related to Society Outreach

c) Benefit to society in terms of Health & Hygiene			
d) Benefit to society in terms of Education	Tangible		

9. Outcome related to Students Learning & Grooming

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10. Any other

Department of Chemistry, Biochemistry and Forensic Science, Amity School of Applied Sciences (ASAS), Amity University Haryana organized a training program with National Good Laboratory Practice Compliance Monitoring Authority (NGCMA) Department of Science and Technology, Govt. of India.

The two days sensitization seminar called " **Good Laboratory Practice for Students**" was held on 10-11th June 2019 at the AUH campus. Ten sessions in total were conducted during the two days program. This Program was completely funded by DST.

The first day event started with welcome address by HOI, ASAS **Prof. AK Yadav**. He emphasized about the importance of such kind of events for every Masters student, Research Scholar and Lab staff and how to explore the Practical implications of the theme in their everyday life.

The second day programme started with opening remarks of Hon. Pro VC **Dr. Padmakali Banerjee**, sharing her thoughts on exploring the imparted knowledge and using conceptual understanding of the subject to work better in a scientific environment. She stressed on understanding the process of scientific inquiry through observation, measurement, problem solving, interpretation and applying existing knowledge and methods to solve current problems.

Honorable Vice Chancellor AUH **Prof. P. B. Sharma** graced the occasion and shared his words of wisdom with the gathering. He mentioned the need of GLP in the present scenario of discoveries and innovations and shared a few examples from his experiences in the past and made the participants aware on how tests should be performed with honesty and integrity.

The inaugural talk was delivered by speaker **Dr. Neeraj Sharma**, Scientist "G" and Head – National Good Laboratory Practice Compliance Monitoring Authority (NGCMA), DST. He highlighted that AUH is the first University in India to initiate the GLP program in collaboration with DST. Other distinguished speakers in the event were Dr. Ekta Kapoor, Prof. D. S. Rawat, Dr. P Uday Kumar and Dr. K. Sadasivan Pillai.

During detailed interaction with PVC, an integration of GLP with course curriculum was planned where NGCMA will act as a mentor. Research themes funded by DST for Haryana state were also discussed for prospective proposals and funding:

1. Deaddiction
2. Mental Health



6. Event Report along with glimpses of the event (Photographs)

6.1 General Introduction of the Event

Department of Chemistry, Biochemistry and Forensic Science, Amity School of Applied Sciences (ASAS), Amity University Haryana jointly organized a two days sensitization seminar called "Good Laboratory Practices for Students" on 10-11th June 2019 at AUH campus with National Good Laboratory Practice Compliance Monitoring Authority Department of Science and Technology - Govt. of India. The speakers were Senior Scientists and Professors, Dr. Neeraj Sharma, Scientist "G" and Head – National Good Laboratory Practice Compliance Authority (NGCMA), DST, Dr. Ekta Kapoor, Scientist 'E', (NGCMA) DST, Dr. K. Sadasivan Pillai, Consultant, Prof. D. S. Rawat, Department of Chemistry, Delhi University, Dr. P Uday Kumar, Scientist 'G', National Institute of Nutrition, Hyderabad and Dr. Anurag Sharma Assistant Professor AUH.

6.2 Objectives of the Event

The objective of the program was to brief students about Regulatory Toxicology, Good Laboratory Practice (GLP) and its benefits, Applicability of GLP, Genesis of NGCMA and its journey to full adherence to "MAD" status, Activities of NGCMA and GLP inspections

3.3 Brief about the address/talk of speakers

DAY 1

Dr. Ekta Kapoor of DST elaborated on the Good Laboratory Practices their advantages, how and where the GLP is applicable and the Certification of the same in India. She emphasized on sensitization and training the students. She also talked about the genesis, achievements and importance of such programs in India. Further, she spoke about the GLP compliance for labs, their certification and monitoring their regular evaluation. As per her, GLP focuses on nonclinical health and environmental safety studies, which are planned, performed, monitored, recorded, archived and reported. She also talked about the applicability of GLP.

Dr. P. Uday Kumar discussed about the OECD principles of GLP and discussed about five point programme i.e. resources, characterization, rules protocols/study plans, results and quality assurance. He also elaborated the ten principles of GLP.

Prof. Diwan Singh Rawat's session was about Test Facility Management & Study Director's Role and Responsibilities. He also discussed about the timeline for archival, how to write a report, calibration, frequency of calibration and relevancy of manuals for writing Standard Operating Procedures (SOPs).

Dr.P. Uday Kumar took the next session, where he talked about how to write SOPs, as per him good SOP means good data quality. He mentioned the main purpose of SOP is to minimize the variability from person-to-person and test-to-test.

Prof. Diwan Singh Rawat, delivered the next talk, in which he explained about test item, delivered Reference Item and test system Calibrated glassware recorded in SOP. As per him, each test and reference item should be characterized/identified (e.g. CAS, Code etc). There must be accountability, retention period of test or control item in archives, archiving test item and common problems. He also gave an example of synthesis of Aspirin and problem related to mentioning the procedure in the SOP.

DAY 2

The Session from 11.50- 13.00hrs was organized for Interaction of Dr.Neeraj Sharma with PIs of DST funded projects- Coordinated by Dr. Rajendra Prasad

Dr. Neeraj Sharma emphasized on following points

- While drafting of R& D proposals, PI need to have collaborations with various other Universities of repute and research and development laboratories of India and abroad.
- PIs, were suggested to indicate relevant outcome of projects while submitting it for award. They were also suggested to find out probable industry partners for their projects.
- Dr. Sharma highlighted the importance of patenting of project outcome. He emphasized that patenting is highly appreciated but the end goal should be to get the patent approved and commercialized.
- Dr.Neeraj Sharma appreciated initiatives taken by Amity University for having focus on research and innovation. He acknowledged the amount of funding given to Amity University by DST.
- Dr Sharma expressed his satisfaction on efforts of scientist of Amity University for good number of patents.

Session was attended by following scientist of AUH

1. Professor P. B. Sharma
2. PI - Dr. Rajendra Prasad
3. PI Dr. Krishna Murari Sinha,
4. PI Dr. Nitai Debnath
5. PI- Dr. Shailendra Kumar
6. Dr. Gargi Bagchi
7. Dr. Jyotsna Sharma
8. Dr. Ravi Dutta Sharma
9. Prof. AK Yadav
10. Dr. Amit Kumar Pandey
11. Dr. Sumistha Das
12. Dr. Atul Thakur
13. Dr. Arvind Chhabra
14. Dr. S. N. Sridhara (Director ASET)
15. Dr. Brijesh Kumar

Dr. K. Sadasivan Pillai – Consultant, the session taken by him was on Laboratory safety and waste management. He discussed about the disposal of different types of chemical waste in labs. He also talked about collection and storage of hazardous waste.

Dr Ekta Kapoor- She discussed about the Assurance Unit: Roles and Responsibility. The quality assurance role includes planning, organizing, problem analysis and assessment, judgment and decision-making, attention to detail and communication skills. Next session was also taken by her on Archiving in a GLP environment, where she spoke about the key player in GLP, Management responsibilities, Study Directors responsibilities, who is the central point if the study control. She discussed the GLP principles again and correlated all the discussion with each and every point made earlier.

Dr. Anurag Sharma, Assistant Professor, ASAS, AUH, delivered a talk on Lab safety Practices at AUH Labs. He stressed that to ensure laboratory safety one should follow safe laboratory practices like knowing the chemicals and hazards associated with your laboratory, wearing personal protective equipment, using ovens and refrigerators in the laboratory exclusively for laboratory operations. No food should be consumed in the laboratories, one should avoid working alone in a laboratory etc.

Dr. K. Sadasivan Pillai – Consultant spoke on topics like Conduct of GLP Study: Importance of Study Plan, Raw Data, Study Report. In his talk he had detailed discussion about study plan, study conduction, study plan amendment, study plan deviation, raw data, raw data digit-tips, recording-tips, correcting-tips etc. He also talked about Uncertainty, Arcsine Transform/Logistic Regression, Data Integrity and finally he explained the concept of ALCOA (Attributable, Legible, Contemporaneous, Original and Accurate). He also mentioned 7 sins in recording the data.

3.3 Photographs with caption (*also share high resolution JPEG files of photographs*)

3.4 Scanned copy of attendance sheets

3.5 Few Scanned feedback forms of participants

DAY 1: JUNE 10, 2019

GOVERNMENT OF INDIA
DEPARTMENT OF SCIENCE AND TECHNOLOGY
NATIONAL GOOD LABORATORY PRACTICE COMPLIANCE MONITORING AUTHORITY



Sensitization Workshop on Good Laboratory Practice for Students on June 10&11, 2019

Amity University, Amity Education Valley Gurgaon, Manesar, Panchgaon, Haryana 122413

Day 1: June 10, 2019

Program Agenda

Time	Topic	Speaker
09:30 – 10:00 HRS	Registration	Amity University
10:00 – 10:03 HRS	Welcome Address by HOI, ASAS	Prof. A K Yadav
10:03 – 10:06 HRS	Address by Hon. Pro Vice Chancellor	Prof. Padmakali Banerjee
10:07 – 10:10 HRS	Address by Hon. Vice Chancellor	Prof. P B Sharma
10.10 - 10.12 HRS	Felicitations of the Guests	
10:10 – 10:30 HRS	Opening Remarks	Dr. Neeraj Sharma, Scientist 'G' & Head, National Good Laboratory Practice Compliance Authority (NGCMA), DST
10:30 – 10:40 HRS	Introduction	All
10:40 – 11:00 HRS	Group Photograph & Networking Tea	
11:00 – 11:50 HRS	Introduction to GLP, Genesis of NGCMA & Achievements made	Dr. Ekta Kapoor, Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST
11:50 – 12:40 HRS	OECD Principles of GLP	Dr. P. Uday Kumar, Scientist G, National Institute of Nutrition, Hyderabad
12:40 – 13:30 HRS	Test Facility Management & Study Director: Roles and Responsibilities	Prof. Diwan Singh Rawat, Chemistry Department, Delhi University
13:30 – 14:15 HRS	Luncheon	
14:15 – 15:00 HRS	Standard Operations Procedures	Dr. P. Uday Kumar, Scientist G, National Institute of Nutrition, Hyderabad
15:00 – 15:50 HRS	Test and Reference Items	Prof. Diwan Singh Rawat, Chemistry Department, Delhi University
15:50 – 16:00 HRS	Tea & Closing of Day 1	



GOVERNMENT OF INDIA
DEPARTMENT OF SCIENCE AND TECHNOLOGY
NATIONAL GOOD LABORATORY PRACTICE COMPLIANCE MONITORING AUTHORITY

Sensitization Seminar on Good Laboratory Practice for Students

Organised by

Department of Chemistry, Biochemistry & Forensic Sciences

Amity School of Applied Science

Amity University, Amity Education Valley Gurgaon, Manesar, Panchgaon, Haryana 122413

June 11, 2019

Welcome and Networking Tea	Receiving Dr. Neeraj Sharma Scientist 'G' & Head, National Good Laboratory Practice Compliance Authority (NGCMA), DST by Vice Chancellor, Pro VC, Prof. Rajendra Prasad, Dr. A K Yadav and Dr. Seema Pathak at D-Block	
	Topic	Speaker
10:00 – 10:03 HRS	Welcome Address by HOI, ASAS	Prof. A K Yadav
10:03 – 10:06 HRS	Address by Pro Vice Chancellor	Prof. Padmakali Banerjee
10:07 – 10:10 HRS	Address by Vice Chancellor	Prof. P B Sharma
10.10 - 10.12 HRS	Felicitation of the Guest of Honour Dr. Neeraj Sharma	By VC and Pro VC
10:12 – 10:30 HRS	Key Note Address	Dr. Neeraj Sharma , Scientist 'G' & Head, National Good Laboratory Practice Compliance Authority (NGCMA), DST
10:30 – 10:45 HRS	Open House with Scientists and Faculty members and students of PhD, M.Sc (Chemistry, Biochemistry and Forensic Science) and Lab staff	
10:45 – 11:00 HRS	Group Photograph	
11:00 – 11:50 HRS	Visit to AUH Research Labs and facilities	Coordinated by Dr. Rajendra Prasad and Dr. A K Yadav
11.50- 13.00HRS	Interaction of Dr. Neeraj Sharma with PIs of DST funded projects	Coordinated by Dr. Rajendra Prasad
11:00 – 11:50 HRS (Parallel)	Quality Assurance Unit: Roles and Responsibilities	Dr. Ekta Kapoor , Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST

session)		
11:50 – 12:15 HRS	Key players in GLP Set-up	Dr. Ekta Kapoor , Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST
12:15 – 12:30 HRS	Laboratory Safety and Waste Management	Dr. K. Sadasivan Pillai , Consultant
12:30 – 13:10 HRS	Lab Safety Practices at AUH labs	Dr. Anurag Sharma , Assistant Professor, ASAS, AUH
13:10 – 14:00 HRS	Luncheon in VIP Lounge D Block	
14:00 – 14:40 HRS	Presentation and Analysis of Raw Data	Dr. K. Sadasivan Pillai , Consultant
14.40 – 14.45 HRS	Concluding Remarks & Vote of Thanks	Dr. Ekta Kapoor , Scientist 'E', National Good Laboratory Practice Compliance Authority (NGCMA), DST Prof. Seema R. Pathak , HoD CBFS, ASAS,



Happy Learning

SOME GLIMPSES OF EVENT



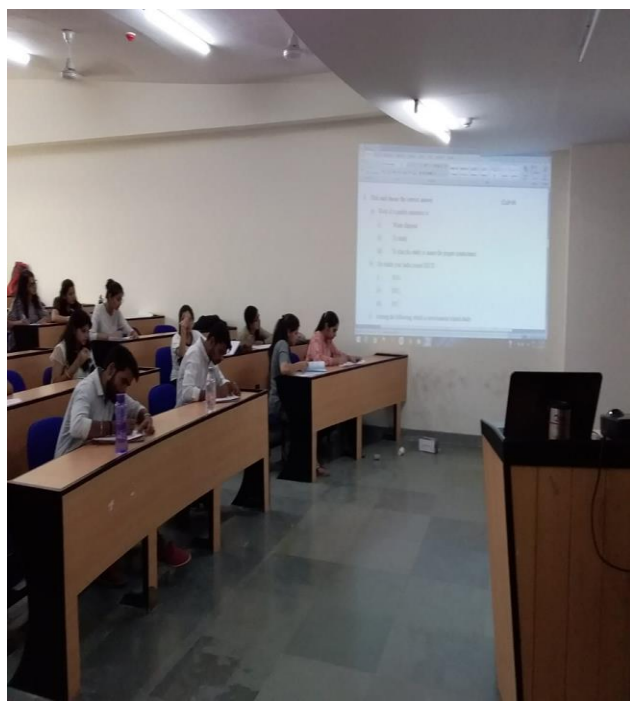
SOME GLIMSES OF EVENT



EXAMINATION OF STUDENTS ON GLP AFTER THE EVENT



GLP seminar was attended by, Lab staff, PhD students and MSc (Chemistry, Biochemistry and forensic science students) of fourth semester. After successfully attended the GLP seminar, examination on GLP was conducted on 13th June 2021. Examination was compulsory to attend for all MSc students. Total weightage for exam was hundred (100) marks, which contains multiple choice questions, short and long questions. It was an open book examination.



Biodata



Dr. Ekta Kapoor works as Scientist 'E' in the Department of Science and Technology, Government of India and a full time GLP Inspector of National Good Laboratory Practice Compliance Monitoring Authority (NGCMA) of India. She is a Registered Pharmacist in Pharmacy (Pharmacology).

Dr. Kapoor has over a decade of experience in GLP compliance monitoring and is a 'Lead Inspector' of NGCMA. The committed and sustained efforts of Dr. Kapoor led to the quantum growth and visibility of NGCMA and its activities. She had been instrumental in the rigorous exercise for attaining India a full adherent status to 'Mutual Acceptance of Data' (MAD) in the OECD's Working Group on GLP. Dr. Kapoor represents India in the meetings of the OECD Working Group on GLP. She conducted the On-Site Evaluation of GLP Programme of Canada as a team leader and is a member of the evaluation team for On-Site Evaluation of Thailand & Japan.

Dr. Neeraj Sharma SCIENTIST 'G' & HEAD (Current)

Technology Development, Patent Facilitation, Drugs & Pharmaceutical Research, State S&T Councils, National Good Laboratory Practices Compliance and Monitoring Authority (NGCMA) and Policy Research in Science & Technology

Additional Charge: Secretary, Technology Development Board, DST, Ministry of S & T, GoI.

He has served Government of India for more than 28 years. And is Member in Committees: -

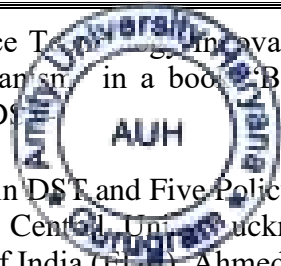
- Technology Mission for Indian Railways (TMIR)
- Apex Committee of BIRAC (Bio-Technology Industry Research Assistance Council), Deptt of Bio Technology, GoI

Inter-ministerial S&T Advisory Committees and has represented the Department at the highest levels such as: PMO, Cabinet Secretariat, Planning Commission, Ministry of Finance in the capacity of an Advisor and In-Charge of Planning & Coordination Cell in DST since 2006.

He has DOCUMENTED AND PUBLISHED various Reports s.a:

1. Annual Plan documents (2006-07 to 2013-14)
2. Five Year Plans (2007-2012) & (2012-2017)
3. Mid Term Appraisals of five year plans
4. Strategic Plan for DST (2012-17)
5. Science, Technology & Innovation Policy 2013
6. Annual Action Plan of DST
7. 11th Plan Achievements of the Department
8. Assisted in Publication and releasing of book on "The Innovators: The Entrepreneurs"

9. Co-authored a chapter entitled “Science Technology and Innovation Policy Research: An Approach to Strengthen Evidence Gathering Mechanism in a book “Bridging the Science-Policy Gap for Inclusive Growth in India” published by DST.



He has curated Policy Research Division in DST and Five Policy Research Centres at IITDelhi, IISc Bangalore, Baba Bhim Rao Ambedkar Centre, Lucknow, Punjab Univ.Chandigarh and Entrepreneurship Development Institute of India (EDI), Ahmedabad. To name a few.....

ACCOMPLISHMENTS & RECOGNITIONS: (Incomplete)

Ø Dr. Neeraj Sharma, has delivered Talks and Discussions on the Science Technology and Innovation Policy in the All India Radio, New Delhi

Ø Chaired an OECD meeting at their Head Quarters in Paris, France on GLP Programme


Ø Dr. Neeraj Sharma has worked as a Head of Technology Development Group which included Clean Energy and Water Technology Missions, Technology Systems Development Programme, Instrumentation Development Programme, Drugs and Pharmaceutical Research Programme, State Science and Technology Programme, Science and Technology Advisory Committees, Good Laboratory Practices.

Ø He has promoted science and technology based entrepreneurship through supporting and scaling of innovations and helped converting Innovations to more than 20,000 start-ups.

Ø He has been instrumental in initiating Swarnajayanti Fellowships, for bright young scientists which eventually became flag bearers of Indian S&T research output.



Faculty Details proforma for DU Web-site

Title	Professor	Diwan	S	Rawat	Photograph
Designation	Professor				
Address	Department of Chemistry, University of Delhi, Delhi-110007				
Phone No Office	27667501; 27667794; Ext 177				
Residence	Provost Lodge, Jubilee Hall, University of Delhi, Delhi-110007				
Mobile	011-27667276 09810232301				
Email	dsrawat@chemistry.du.ac.in; diwansrawat@gmail.com				
Web-Page	http://www.du.ac.in/faculty_member_details.htm?id=1799 www.diwansrawat.webs.com				
Educational Qualifications					
Degree	Institution	Year			
Ph.D.	Central Drug Research Institute, Lucknow, UP/Kumaun University, Nainital, UK	1998			
M.Phil. / M.Tech.	NA				
PG	Kumaun University, Nainital, UK	1993 (First Position in the University)			
UG	Kumaun University, Nainital, UK	1991			
Any other qualification					
Career Profile					
<ul style="list-style-type: none"> • Professor, Department of Chemistry, University of Delhi, Delhi, 110007, India (March 2010-Till Date). • Associate Professor, Department of Chemistry, University of Delhi, Delhi, 110007, India (July 2006-March 2010). • Reader, Department of Chemistry, University of Delhi, Delhi, 110007, India (July 2003-July 2006). • Assistant Professor, Department of Medicinal Chemistry, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, Punjab, India (Nov 2002-July 2003). • National Institute of Health (NIH) Postdoctoral Fellow, Department of Medicinal Chemistry and Molecular Pharmacology, Purdue University, West Lafayette, IN, USA (Sept 2001-Nov 2002). • American Cancer Society (ACS) Postdoctoral Fellow, Department of Chemistry, Indiana University, Bloomington, IN, USA, (Nov 1999-Sept 2001). • Scientist, R & D Department, Lupin Laboratories Ltd. Mandideep, M.P., India (Sept 1998-Nov1999). Involved in the process and development of Lisinopril, quinalapril based antihypertensive drugs, and handled reaction on 50 kg scale. 					

ATTENDANCE SHEET



Participants for the Sensitization program on GLP for the PhD students, MSc Students IV Sem and the Lab Staff of the CBFS Department in collaboration with DST

AC - APPLIED CHEMISTRY
Attendance sheet of Day 1 (10/06/2019)

	Student Name	Enrolment No.	Course	Session- I
1	Mr ARUN DAGAR	A51650917031	MSC AC	<i>Arun</i>
2	Mr ARUN KUMAR	A51650917064	MSC AC	<i>Arun Kumar</i>
3	Mr BHONI KUMAR	A51650917061	MSC AC	<i>Bhoni</i>
4	Mr GAUTAM YADAV	A51650917027	MSC AC	<i>Gautam</i>
5	Mr KAPIL VATS	A51650917052	MSC AC	<i>Kapil</i>
6	Mr PRITAM	A51650917036	MSC AC	<i>Pritam</i>
7	Mr RAKESH SINGH	A51669017004	MSC AC	
8	Mr RAVINA YADAV	A51650917035	MSC AC	<i>Ravina</i>
9	Mr SHIKHAR SHARMA	A51650917055	MSC AC	<i>Shikhar Sharma</i>
10	Mr VARUN SHARMA	A51650917050	MSC AC	<i>Varun Sharma</i>
11	Mr VINAY PAL	A51650917017	MSC AC	<i>Vinay</i>
12	Mr YOGESH KUMAR	A51650917034	MSC AC	<i>Yogesh Kumar</i>
13	Ms AASHI JAIN	A51650917020	MSC AC	<i>Aashi</i>
14	Ms ANITA YADAV	A51650917037	MSC AC	<i>Anita</i>

Participants for the Sensitization program on GLP for the PhD students, MSc Students IV Sem and the Lab Staff of the CBFS Department in collaboration with DST

15	Ms ANJU SANDHU	A51650917015	MSC AC	<i>Anju</i>
16	Ms ANJUWANI	A51650917042	MSC AC	<i>Anjuwani</i>
17	Ms ANNU DHANDA	A51650917016	MSC AC	<i>Annu</i>
18	Ms ANSHUL	A51650917019	MSC AC	<i>Anshul</i>
19	Ms ARTI CHHILLAR	A51650917012	MSC AC	<i>Arti</i>
20	Ms BHAWNA RANI	A51650917030	MSC AC	<i>Bhawna</i>
21	Ms DEEPIKA	A51650917040	MSC AC	<i>Deepika</i>
22	Ms DEEPIKA YADAV	A51650917056	MSC AC	<i>Deepika Yadav</i>
23	Ms DRAKSHA SHARMA	A51650917049	MSC AC	<i>Draksha</i>
24	Ms HEMLATA YADAV	A51650917029	MSC AC	<i>Hemlata</i>
25	Ms LILY SHARMA	A51650917045	MSC AC	<i>Lily</i>
26	Ms MANISHA SEHRAWAT	A51650917060	MSC AC	<i>Manisha</i>
27	Ms MANJU	A51650917062	MSC AC	<i>Manju</i>
28	Ms MOHINI	A51650917038	MSC AC	<i>Mohini</i>
29	Ms MONIKA	A51650917007	MSC AC	<i>Monika</i>
30	Ms MUNESH KUMARI	A51650917010	MSC AC	<i>Munesh</i>

Participants for the Sensitization program on GLP for the PhD students, MSc Students IV Sem and the Lab Staff of the CBFS Department in collaboration with DST

31	Ms NAOREM OLIVIA DEVI	A51650917058	MSC AC	N. Olivia
32	Ms NEHA YADAV	A51650917051	MSC AC	—
33	Ms NISHA YADAV	A51650917044	MSC AC	Nisha Yadav
34	Ms PAYAL	A51650917044	MSC AC	Payal
35	Ms POOJA	A51650917044	MSC AC	Pooja
36	Ms POOJA SINGH	A51650917041	MSC AC	Pooja Singh
37	Ms POOJA YADAV	A51650917023	MSC AC	Pooja Yadav
38	Ms PRATIBHA	A51650917026	MSC AC	Pratibha
39	Ms PRIYANKA	A51650917063	MSC AC	Priyanka
40	Ms RENUKA YADAV	A51650917032	MSC AC	Renuka
41	Ms SANGEETA	A51650917028	MSC AC	Sangeeta
42	Ms SHAVETA SHARMA	A51650917004	MSC AC	—
43	Ms SHRUTI BHARDWAJ	A51650917006	MSC AC	Shruti
44	Ms SIDHI SHARMA	A51650917022	MSC AC	Sidhi
45	Ms SONIYA	A51650917005	MSC AC	Soniya
46	Ms SUNNY	A51650917024	MSC AC	Sunny
47	Ms TWINKLE	A51650917021	MSC AC	Twinkle

Participants for the Sensitization program on GLP for the PhD students, MSc Students IV Sem and the Lab Staff of the CBFS Department in collaboration with DST

48	Ms VANDANA JOSHI	A51650917058	MSC AC	Vandana
49	Ms VANDANA YADAV	A51650917025	MSC AC	Vandana
50	Ms VIJETA	A51650917011	MSC AC	Vijeta



Participants for the Sensitization program on GLP for the PhD students, MSc Students IV Sem and the Lab Staff of the CBF5 Department in collaboration with DST

BC - BIOCHEMISTRY

Attendance sheet of Day 1 (10/06/2019)

	Student Name	Enrolment No.	Section	Session 1
51	Mr AMIT KUMAR	A51669017002	MSC BC	<i>Amit K</i>
52	Mr SANDEEP SINGH	A51669017012	MSC BC	<i>Sandeep S</i>
53	Ms ADITI SAXENA	A51669017011	MSC BC	<i>Aditi S</i>
54	Ms JYOTI	A51669017008	MSC BC	<i>Jyoti</i>
55	Ms MONIKA	A51669017007	MSC BC	<i>Monika</i>
56	Ms NAMEWATI	A51669017005	MSC BC	<i>NAMEWATI</i>
57	Ms NEHA	A51669017010	MSC BC	<i>Neha</i>
58	Ms PRIYANKA YADAV	A51669017006	MSC BC	<i>Priyanka</i>
59	Ms RITIKA RAGHAV	A51669017014	MSC BC	<i>Ritika</i>
60	Ms RUCHIKA SOLANKI	A51669017009	MSC BC	<i>Ruchika</i>
61	Ms SANGEETA KUMARI	A51669017003	MSC BC	<i>S. Kumari</i>

FEEDBACK FORM OF STUDENTS



Feedback on Sensitization Workshop on GLP for Students
jointly organized by NGCMA, DST, GOI &
CBFS ASAS, Amity University Haryana
10th & 11th June 2019

Name of the Student:..... Pratibha

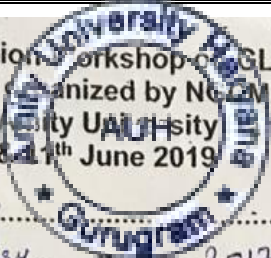
Course:..... M.Sc. - Applied Chemistry Batch:..... 2017-2019

Email ID:..... pratibha.1118@gmail.com

S.No	Questions	Yes	No	
1.	Did this program bring any change in your understanding of the GLP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If yes, what kind of.... <u>GLP and GMP plays impo- role during our lab experiments, it increase the validity of our data, its repeatability.</u>
2.	How was your experience interacting with experts from institutes & DST?	Satisfactory	Good	Excellent
4.	Have you found any innovative idea of making GLP relevant to teaching and research Labs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If yes, discuss.... <u>Maintaining proper data of those experiments, for which we haven't get any results.</u>
5.	Would you attend such seminar programs if organized in near future?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If yes, suggest topics/ interest areas.... <u>Guidelines related to waste management- (plastic), and on EHS - Environment - Health & Safety.</u>

Pratibha
Signature of the Student

Feedback on Sensitization Workshop on GLP for Students
 jointly organized by NEMA, DST, GOI &
 CBFS ASAS, University of Jammu
 10th & 11th June 2019



Name of the Student: Manika

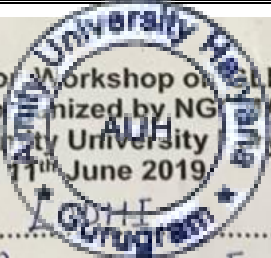
Course: M.Sc. Applied Chemistry Batch: 2017-19

Email ID: myadav.chemistry@gmail.com

S.No	Questions	Yes	No	
1.	Did this program bring any change in your understanding of the GLP?	✓		If yes, what kind of.... This GLP is very attractive topic. All of our lab instructions should be followed very well for the safety purpose.
2.	How was your experience interacting with experts from institutes & DST?	Satisfactory	Good	Excellent
4.	Have you found any innovative idea of making GLP relevant to teaching and research Labs?	✓		If yes, discuss.... If we will make GLP relevant to teaching then more of the lab work can be handled safely & we can get better results for our samples done.
5.	Would you attend such seminar programs if organized in near future?	✓		If yes, suggest topics/ interest areas.... I will definitely attend such seminar. & I will choose the area of lab instrumentation. That can be XRD UV & HPLC instruments.

Manika
 Signature of the Student

Feedback on Sensitization Workshop on GLP for Students
 jointly organized by NGMA, DST, GOI &
 CBFS ASAS, Anand University, Gandhinagar, Gandhinagar
 10th & 11th June 2019

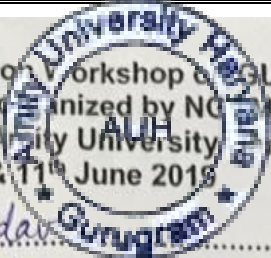


Name of the Student: TARUNA
 Course: Msc. (Forensic Sci.) Batch: I
 Email ID: lodhitanu@gmail.com

S.No	Questions	Yes	No	
1.	Did this program bring any change in your understanding of the GLP?	Yes ✓	No	If yes, what kind of... I came to know that GLP is not only beneficial for govt agencies in terms of Quality but also for students in terms of facilities
2.	How was your experience interacting with experts from institutes & DST?	Satisfactory	Good	Excellent ✓ Their way of transferring data is amazing.
4.	Have you found any innovative idea of making GLP relevant to teaching and research Labs?	Yes ✓	No	If yes, discuss.... In our university, safety and Quality both can be updated and maintained according to GLP standards.
5.	Would you attend such seminar programs if organized in near future?	Yes ✓	No	If yes, suggest topics/ interest areas.... Workshop regarding the new forensic subjects and employment ideas AS forensic students really need clear view of their future.

Lodhi
 Signature of the Student

Feedback on Sensitization Workshop on GLP for Students
 jointly organized by NCQA, DST, GOI &
 CBFS ASAS, Anand University,aryana
 10th & 11th June 2019



Name of the Student: Nancy Yadav

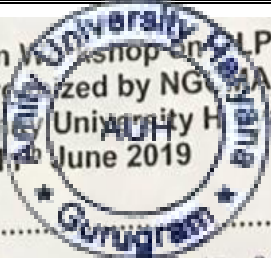
Course: MSc. Forensic Science - IV Sem Batch: 2017-19

Email ID: ny977310@gmail.com

S.No	Questions	Yes	No	
1.	Did this program bring any change in your understanding of the GLP?	Yes ✓	No	If yes, what kind of... Earlier, when I heard GLP, that was only wearing gloves, lab coat in my understanding now I came to know about the GLP properly.
2.	How was your experience interacting with experts from institutes & DST?	Satisfactory	Good	Excellent ✓
4.	Have you found any innovative idea of making GLP relevant to teaching and research Labs?	Yes ✓	No	If yes, discuss.... If at the college level, a student will understand GLP, then in the future when go in reputed industry that student will be already aware of good lab practices.
5.	Would you attend such seminar programs if organized in near future?	Yes ✓	No	If yes, suggest topics/ interest areas.... The topics which will help in our future, when will go for any job, Topics like, - one was the GLP, then, how to teach, deal with seniors, juniors much like that.

Nancy
 Signature of the Student

Feedback on Sensitization Workshop on GLP for Students
 jointly organized by NGL, DST, GOI &
 CBFS ASAS, Anand University Himachal Pradesh
 10th & 11th June 2019



Name of the Student: Tyoti

Course: M.Sc. (Biochemistry) Batch: 2017-2019

Email ID: yadavkanwarlal18@gmail.com

S.No	Questions	Yes	No	
1.	Did this program bring any change in your understanding of the GLP?	Yes	No	If yes, what kind of... When I do work in lab I always remember GLP. And it's good for health and also for research work.
2.	How was your experience interacting with experts from institutes & DST?	Satisfactory	Good	Excellent - Because also teachers have good knowledge and they share with us.
4.	Have you found any innovative idea of making GLP relevant to teaching and research Labs?	Yes	No	If yes, discuss... We make our lab very advance.
5.	Would you attend such seminar programs if organized in near future?	Yes	No	If yes, suggest topics/ interest areas.... Lab safety programs. because it's good for all new students also.

Tyoti

Signature of the Student



Feedback on Sensitization Workshop on GLP for Students
jointly organized by NGCMA, DST, GOI &
CBFS ASAS, Amity University Haryana
10th & 11th June 2019

Name of the Student: Shruti Bhardwaj

Course: M.sc Applied Chemistry ^{4th sem} Batch: 2017-2019

Email ID: bhardwajshruti0113@gmail.com

S.No	Questions	Yes	No	
1.	Did this program bring any change in your understanding of the GLP?	<input checked="" type="checkbox"/>		If yes, what kind of.... <u>Data should not manipulate</u> <u>Always Consider a reference reacting</u>
2.	How was your experience interacting with experts from institutes & DST?	Satisfactory	Good	Excellent <input checked="" type="checkbox"/>
4.	Have you found any innovative idea of making GLP relevant to teaching and research Labs?	<input checked="" type="checkbox"/>	No	If yes, discuss.... <u>Before session starting a seminar on GLP should introduce to Labs assistants and student's.</u>
5.	Would you attend such seminar programs if organized in near future?	<input checked="" type="checkbox"/>	No	If yes, suggest topics/ interest areas.... <u>How to deal particular chemicals.</u> <u>their storage</u> <u>Handling procedures.</u>

Shruti
Signature of the Student





**Amity Lipidomics Research Facility
(ALRF)**

Sponsored by DST-FIST, GOI



**Amity Institute of Biotechnology
Amity Institute of Integrative Science &
Health
Amity University Haryana
Manesar – Gurgaon
INDIA**



**AMITY LIPIDOMICS RESEARCH FACILITY SPONSORED BY
DST-FIST AND AUH
(Established: August 2018)**

The Amity Lipidomics Research facility sponsored by DST-FIST and AUH was formally operational since August 2018. The facility is equipped with Q-Trap 4500 (SCIEX) coupled to a high performance HPLC system, Exion LC-AC (SCIEX) for providing LC-MS and LC-MS/MS facility.



The facility has been regularly operational catering to the research needs of in-house faculty. **A number of mass spectrometry based projects funded by extramural funding agencies are being carried out at the ALRF facility. These projects have resulted in a number of publications in reputed peer-reviewed journals.**

Some of these projects include:



- A mass spectrometric approach to unravel the landscape of sphingolipids as major signaling determinants of drug resistance and virulence in emerging human fungal pathogen *Candida auris* (DBT), **PI-Dr. Rajendra Prasad**
- Unraveling the Role of mTORC2 in Regulation of Sphingolipid Biosynthesis in Breast Cancer (DBT), **PI-Dr Ujjaini Gupta**
- Comparative Sphingolipid Profiling of Breast Cancer Cell and Tissue Types for Identification of Potential Metastatic Biomarkers (SERB-ECRA), **PI-Dr Ujjaini Gupta**
- Evaluation of antimycobacterial potential of Unani Drugs Qurs-e-Sartan Kafoori and Sharbat-e-Ejaz-A Mechanistic Approach (Govt of India Ministry of Ayush) **PI-Dr. Zeeshan Fatima**

OUTCOME

The services provided by ALRF to AUH in-house faculty have led to publications in prestigious peer-reviewed journals.

1. Hans, S., Purkait, D., Nandan, S., Bansal, M., **Hameed, S.** and **Fatima, Z.**, **2020**. Rec A disruption unveils cross talk between DNA repair and membrane damage, efflux pump activity, biofilm formation in *Mycobacterium smegmatis*. ***Microbial Pathogenesis***, p.104262.
2. Kumar, M., Singh, A., Kumari, S., Kumar, P., Wasi, M., Mondal, A.K., Rudramurthy, S.M., Chakrabarti, A., Gaur, N.A., Gow, N.A. and **Prasad, R.**, **2020**. Sphingolipidomics of drug resistant *Candida auris* clinical isolates reveal distinct sphingolipid species signatures. ***Biochimica et Biophysica Acta (BBA)-Molecular and Cell Biology of Lipids***, 1866(1), p.158815.
3. Shahi, G., Kumar, M., Kumari, S., Rudramurthy, S.M., Chakrabarti, A., Gaur, N.A., Singh, A. and **Prasad, R.**, **2020**. A detailed lipidomic study of human pathogenic fungi *Candida auris*. ***FEMS Yeast Research***, 20(6), p.foaa045.
4. Medatwal, N., Ansari, M.N., Kumar, S., Pal, S., Jha, S.K., Verma, P., Rana, K., **Dasgupta U.**,* and Bajaj A.*, **2020**. Hydrogel-mediated delivery of celastrol and doxorubicin induces a synergistic effect on tumor regression via upregulation of ceramides. ***Nanoscale***, 12(35), pp.18463-18475.
5. S., Medatwal, N., Kumar, S., Kar, A., Komalla, V., Yavvari, P.S., Mishra, D., Rizvi, Z.A., Nandan, S., Malakar, D. and Pillai, M., Srivastava A., Sharma R.D., Sengupta S., **Dasgupta U.**,* and Bajaj A.* **2019**. A Localized Chimeric Hydrogel Therapy Combats Tumor Progression through Alteration of Sphingolipid Metabolism. ***ACS Central Science***, 5(10), pp.1648-1662
6. Kumar, S., Thakur, J., Yadav, K., Mitra, M., Pal, S., Ray, A., Gupta, S., Medatwal, N., Gupta, R., Mishra, D. and Rani, P., Padhi S., Sharma P., Kapil A.,



Srivastava A., **Dasgupta U.**, Priyakumar U., Thukral L., and Bajaj A.* , 2019. Cholic Acid-Derived Amphiphile which Combats Gram-Positive Bacteria-Mediated Infections via Disinfection of Lipid Clusters. **ACS Biomaterials Science & Engineering**, 5(9), pp.4764-4775.

ALRF has now started providing service to outside Universities and Institutes including Botanical Survey of India, Eastern Regional Centre, Shillong and Manipal University.

Workshops and training organized by ALRF in collaboration with SCIEX, India

- **Short-term Course** on “General Principles of Lipidomics and Proteomics” at Amity Lipidomics Research Facility (ALRF) Amity University Haryana and SCIEX, Gurgaon, Haryana (**25th -29th March 2019**)
- **Webinar** "Current Trends in Lipidomics and Proteomics based workflows" Dr Dipankar Malakar Application Support Manager LC-MS based Omics and Biopharma applications, SCIEX, INDIA (**October 13th-14th, 2020**).





ALRF Staff:

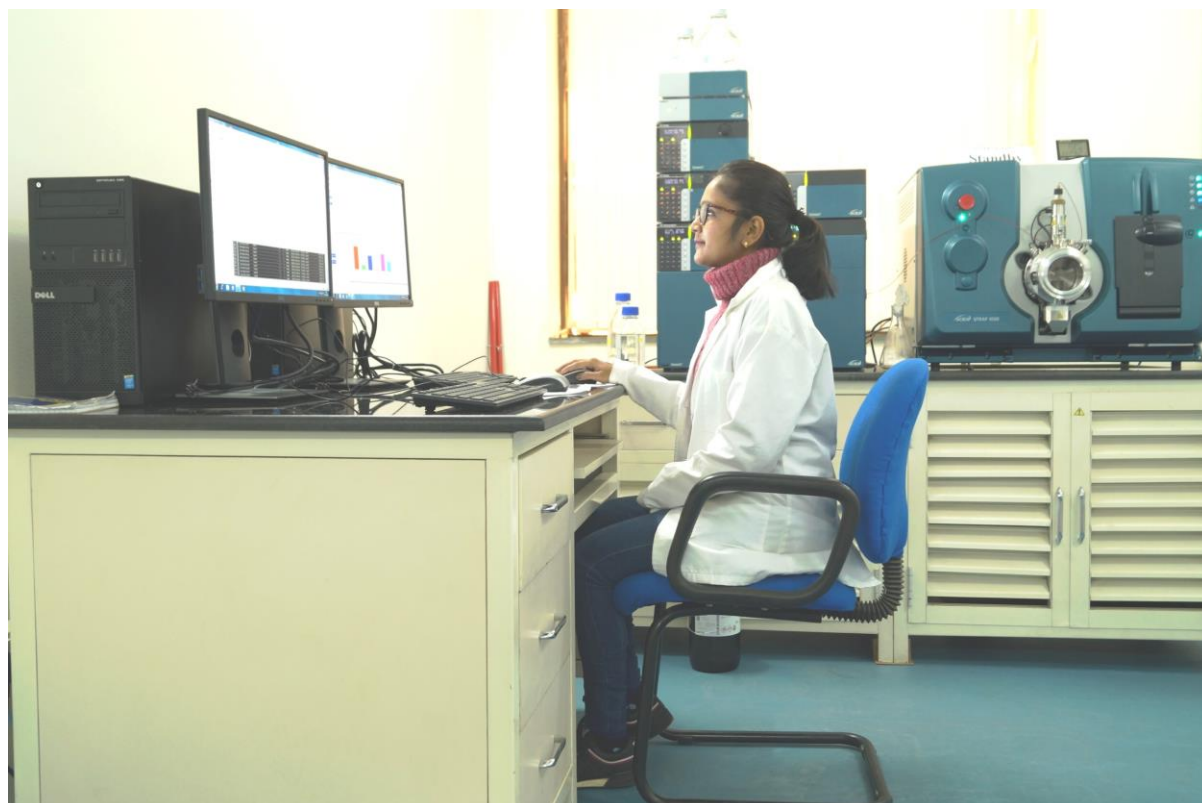
Professor Rajendra Prasad (Director & Dean AIB, AIISH)

Dr Ujjaini Dasgupta (Faculty-in-charge)

Ms Kaushavi Cholke (Technical Officer & Operator)

Ms Kanchan Pandey (CIRF Manager)

<https://www.amity.edu/gurugram/lipidomics-research-facility.aspx>





Nanotechnology for Healthcare and Environment - Exploring New Horizons

DST FIST-AMITY FUNDED PROJECT (2019-2024)

**Fund for Improvement of S&T Infrastructure in Universities
and Higher Educational Institutes**

awarded to

Amity School of Applied Sciences (ASAS), Amity University Haryana, Gurugram

Amount: **Rs. 84.0 Lakhs**

Duration: **5 Years (2019-2024)**

Category: **Physical Sciences**

Major Instruments Approved: **Zetasizer Nano ZS, Simultaneous Thermal Analyzer
Modular Spectrometer, Auxiliary Setup (UV-VIS-NIR
with Integration Sphere**

Focus Areas: **Drug delivery, Antimicrobial property and cytotoxicity, Biosensors,
Energy storage, Water purification and related Computer
simulation/analysis**

Nature of Work: **Interdisciplinary**

Government of India has an initiative titled "**Fund for Improvement of S&T infrastructure in Universities & Higher Educational Institutions (FIST)**" to rebuild the Science & Technology infrastructure in the Universities and related Academic institutions that are in need for strengthening their existing S&T infrastructure with adequate funding.

Amity School of Applied Sciences (ASAS) has been awarded the prestigious **DST-FIST 2019 in Physical Sciences** for the proposal entitled "**Nanotechnology for Healthcare and Environment - Exploring New Horizons**" encompassing **Swastha Bharat and Swachh Bharat Missions of Government of India**. Under the project, researchers of ASAS are synthesizing and doing characterization of novel nanomaterials which have applications particularly in the field of healthcare and environment with specific emphasis on Drug delivery, Antimicrobial property



and cytotoxicity, Biosensors, Energy storage and water purification. The interdisciplinary nature of the work is shown in the pictogram.



- AKY: AK Yadav
- RP: Rajendra Prasad
- JD: Joydeep Dutta
- SM: Sudip Majumdar
- AS: Anurag Sharma
- CS: Chandra Shekhar
- CMS: CM Srivastava
- DG: Debasree Ghosh
- DV: Deepti Vaya
- AB: Ayana Bhaduri
- SP: Seema Pathak
- SK: Sunita Kumawat
- BK: Brijesh Kumar
- AT: Atul Thakur
- MS: Manish Shandilya
- SK: Supreet Kaur
- MS: Manish Shandilya
- AD: Anirban Das
- KB: Kamalakanta Behera
- KS: Kamal N Sharma
- GKR: GK Rao
- VR: Varun Rawat

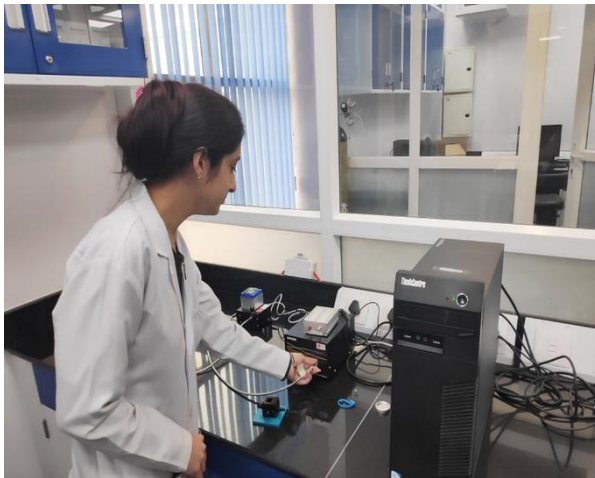
The existing research facilities in ASAS and AUH labs including Central Instrumentation Research Facility has got a significant boost with the addition an in-house nanomaterial characterization facility under FIST-AMITY sponsored grant. **High-End instruments like Zeta Sizer for Dynamic Light Scattering (DLS), Differential Thermal Analyzer (DTA), Modular Spectrometer and Double Beam UV-Vis Spectrophotometer** are currently being used to carry out the proposed nanotechnology work.



Dynamic Light Scattering Instrument (Zetasizer Nano ZS-Malvern) capable of measuring nanoparticle size and zeta potential, acquired by the FIST grant



Differential Thermal Analyzer Instrument (ST 8000-Perkin Elmer) capable of measuring thermal stability of synthesized nanoparticles, acquired by the FIST grant



Spectroscopic Instrument (Modular Spectrometer-RIII India) capable of characterizing nanoparticles, acquired by the FIST grant



Spectroscopic Instrument (UV-Vis Spectrophotometer Lambda 365-Perkin Elmer) capable of characterizing nanoparticles, acquired by the FIST grant



Such high-end instruments have put AUH in a truly advantageous position to carry out cutting-edge research. This facility is accessible to faculty and researchers working in various institutes within AUH, all Amity sister university campuses, other universities, institutes and industry. The facility has also become a platform for organizing short-term National and International courses and workshops on various aspects of DLS/DTA/Spectroscopy. This has helped AUH in developing National/International networking and collaborations.



BRIEF REPORT ON GOVERNANCE OF EXCELLENCE

AMITY CENTRE FOR OCEAN-ATMOSPHERIC SCIENCE AND TECHNOLOGY (ACOAST) & AMITY CENTRE FOR ENVIRONMENTAL SCIENCE AND HEALTH (ACESH)

1. VISION AND MISSION

With the growing population and increased urbanization, land-use, land-cover, and density of industries have increased many-fold in the last decades, and as a result, the pollution level is on the rise. Moreover, the Indian subcontinent is one of the highly populated regions in the world, where more than one billion people (about one-sixth of the world's population) live and are exposed to enormous pollution produced by various natural and anthropogenic sources. The increase in pollution level, consequently an increase in **aerosol** or **aeroticulates** (tiny particles of solid, liquid and gaseous particles, suspended in the atmosphere or Particulate Matter (PM)) loading, has direct impact on human health, energy, water and climate. Thus, atmospheric aerosol pollutant is an important governing factor and driving force in many environmental aspects. Recognizing this ubiquitous role of aerosols in the Environmental Pollution, Earth-Atmosphere Radiation Balance, Air-Sea Interaction, Hydrology, Energy and Health, a new initiative of “**Amity Centre for Ocean-Atmospheric Science and Technology (ACOAST)**” has been launched on **03 June 2014 at AUH**. This Centre was envisioned by Hon'ble Founder President Dr. Ashok K. Chauhan; Hon'ble Chancellor Dr. Aseem Chauhan; President of Amity Science, Technology and Innovation Foundation, and Director General for Amity Directorate of Science and Innovation Dr. W. Selvamurthy; mentored by Prof. Dr. S.K. Dube, Former VC, AUR and Prof. Dr. P.B. Sharma, VC, AUH; spearheaded and supported by Prof. Dr. Padmakali Banerjee, Pro-VC, and Maj. Gen. B.S. Suhag, Deputy VC. It conducts inter-disciplinary teaching and research to better understand the complex science of air quality, monsoonal weather, climate impacts on our planet Earth. Following the visits and suggestions of Dr. Srikanth S. Nadadur, Program Director, National Institute of Health Sciences, USA and Dr. Kirk R. Smith, Professor of Global Environmental Health, University of California, Berkeley, USA, to whom AUH awarded Honorary Professorship, another initiative, namely, “**Amity Centre for Environmental Science and Health (ACESH)**” has been implemented at AUH in **October 2015**.

2. OBJECTIVES

- Curriculum and Examination Scheme of the on-going 2-year Tech. Program "Atmospheric Technology and Climate Management (ATCM)"
- Augmentation of the Course Curriculum with a Minor Program “Environmental Health and Climate' and a Diploma Course in 'Multi-Disciplinary Remote Sensing',
- Development of a Hub for Air Quality/Pollution and Allied Studies to make the AMITY, a world-leading Institution.
- Active and passive remote sensing of atmospheric aerosol pollutants
- To investigate the role of aerosol-cloud-radiation interactions in weather and climate,
- Saline water intrusion into the ground water and Bio-Geo Chemistry and Polar Science.

3. MAJOR RESEARCH AREAS

- Aerosol Pollution Monitoring and Modeling



- Ground-based and Satellite Remote Sensing
- Environmental and Human Health: Cohort Studies
- Aerosol-Cloud-Radiation-Precipitation-Climate Interactions
- Bio-Geo Chemistry, Polar Science, Weather and Climate Change.

4. LABORATORIES ESTABLISHED

The World-Class and State-of-the-Art Laboratories, namely, Climate Research Laboratory (CRL), Solar Radiometry Laboratory (SRL) and Air Quality Monitoring (AQMS), have been developed and are displayed Figure 1. Besides the Research Innovations, some of these experimental facilities are also being used for the Practical / Dissertation work of the students of ACOAST, ASEES, ASAS and ASET.

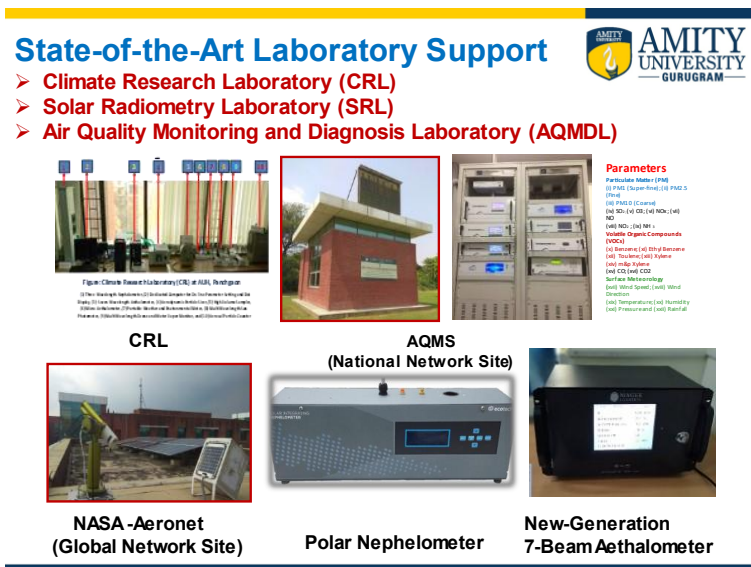


Figure 1: Laboratory Facilities created at ACOAST-ACESH, AUH, Gurugram

5. STAFF/STUDENT POSITION AS ON TODAY

Prof. Dr. P.C.S. Devara, Director/Head (DoJ: 12 March 2014); Dr. Amrit Kumar, Assistant Professor-II (DoJ: 14 May 2019); Dr. Amitabh Tripathi, Assistant Professor-II (DoJ: 11 June 2019); Dr. P.P. Das, Assistant Professor-I (DoJ: 03 March 2017); Dr. Abul Amir Khan; Assistant Professor-I & Head (ACAPC) (DoJ: 01 May 2019 & 21 September 2020); Mr. Shubhansh Tiwari, Research Associate (DoJ: August 2018); Ms. Neenu Yadav, Research Fellow (DoJ: 2017); Ms. Kalpana Garsa, Research Fellow (DoJ: 2017); Ms. Priyanka D. Bhojar, M. Tech (ATCM) Student (DoJ: 2019) and Mr. Deepanshu, Pean (DoJ: 2019)

6. ACADEMIC AND RESEARCH ACCOMPLISHMENTS

- Organized a Workshop on “Role of Aerosols in Air Quality, Weather and Climate”, 8 January 2015.
- Conducted a series of air quality experiments at AUH from December 2015 through May 2016 (First & Second Phases) to study the efficacy of the Odd-Even Scheme, implemented by the Government for combating the Delhi air pollution.
- Organized an Indo-US Symposium on “Air Quality and Health Issues: The Global Experiences”, in collaboration with NIEHS, NYU, JHU and US-EPA, was organized at Amity University Haryana (AUH) on 07 November 2016.
- Dust Episode Observations during 2015-2020.
- Air Quality Measurements during Festive Periods (Diwali, Holi, celebrations) during 2014-2019.
- Organized a 10-day Ladakh Expedition of AOD, Ozone and water vapor during 1 to 10 August 2019.



- Organized an International Symposium on “Air Pollution - Causes, Mitigation and Strategic Planning” at AUH on 20 September 2019
- Multi-sensor probing of Crop-residue burning (P. an) during October-November 2017, 2019& 2020.

7. WORK DONE DURING COVID-19

- A Pandemic Infectious Disease of Microbiological Origin with DNA as host.
- Spreads through Animal-to-Human and Human-to-Human Transmission of Pathogens.
- Lockdown and Social Distancing are Found to be Possible Remedies.
- Regions with History of High Pollution are More Likely to Succumb to the Disease.
- An Increase of **1 micro-gram per cubic meter in PM2.5 is Associated with a 15% Increase in the COVID-19 Death Rate.**
- Departures in Criteria Pollutant Concentrations Helped to Capture the Presence, Intensity and Spatial Spread
- Indoor Pollution is Found Responsible for Rise in Death Rate During COVID-19

8. ACHIEVEMENTS SO FAR

- **Awards / Honors / Recognition:** 15 (Including the recent Eminent Scientist Award and Lifetime Achievement Award).
- Intra-/Inter-Amity National/Int'l **Collaborative Research Projects:** Consortium: 05, Cost: 8.2 Crores (ongoing); Funded:05, Cost: 6.37 Crores (Under Review)
- **Students' Dissertation Projects:** 15
- **Field Observation Programs Organized:** 04
- **National/International Deputations:** 30
- **Patents Published:** 06
- **Press / Media Releases of Research Findings:** 10

9. PUBLICATIONS: 125

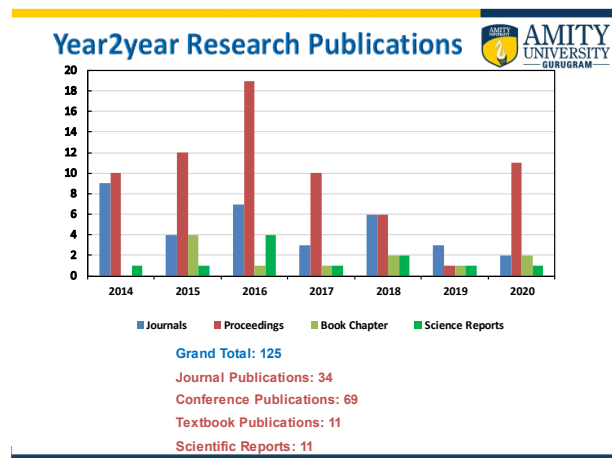


Figure 2: Year-Wise Refereed Research Publications during 2014-2020

10. ROAD MAP / WAY FORWARD

- Strengthen the curriculum by advancing the present syllabi and introducing new job-leading courses.
- Prepare more research projects and develop interactions with industries and develop patents.
- Enhance National and International Collaborations, encourage students' visits, Ph. D. Research Programs, and post-doc fellowships.
- Advance Experimental and Modeling studies of aerosol pollution-cloud-health-climate interactions.
- Develop interplay studies between Atmosphere, Land-Surface and Ground Water
- Short and Long-term Exposure Effects of pollutants on human health



About the Centre

Centre of Robotics and Artificial Intelligence was established in January, 2014 with the vision of ushering a new age of robots and making it the best place for Robotics & AI research. With the world moving towards Robotics, this Centre was established to fuel research and innovation in this field to bring enhanced precision & efficiency.

Objectives

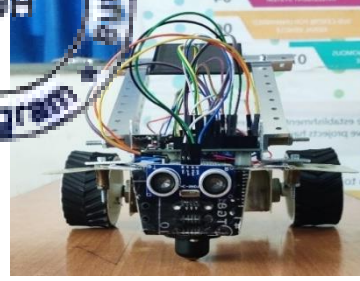
- To boost students interest in the area of Robotics and AI and to facilitate the sharing of expertise.
- To provide outreach to local, regional, national, and international communities focusing on Robotics and AI education, competitions, research and workshops.
- To engage students in Robotics and AI related projects.
- To provide interdisciplinary research work with different schools.
- To collaborate with the industries and develop industry-oriented products.

Few Innovative Projects

AmiPi-Humanoid Robot	
IoT based Smart Dustbin	



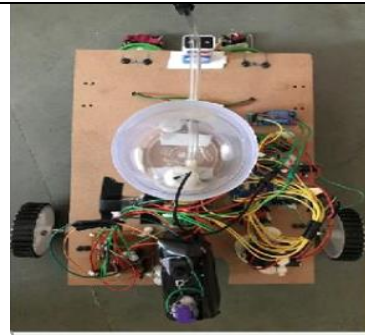
Solar Car with Obstacle Detection



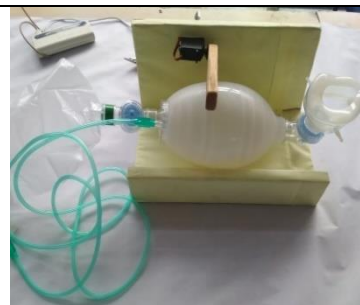
Medicine Drone



Mopping Robot



IoT based Low Cost Ventilator



Activities & Achievements



Participated in **Ground Zero Summit-2016** held at **Radisson Hotel, New Delhi**. Our team presented two projects- Line Follower and Humanoid and won the first prize.



On the occasion of Engineer's Day 15th Sep, 2016, Centre of Robotics and Artificial Intelligence organized an ethical hacking competition **Capture the Flag**.



Won **World Robotic Olympiad-2016** at national level held in Netaji Indoor Stadium, Kolkata from 22nd to 23rd October, 2016 and represented the India at International level competition held in India Expo Mart, Greater Noida.





Mr. Rohan and Mr. Jeevesh Awal participated in Robot Sports competition “Robo Bowling” and “Robo Wrestling” organized by IIT Bombay on 17-18 December 2016 and award with the award of excellence.



48-hours competition **Amirobo-2016** organized by Center of Robotics and Artificial Intelligence with the aims to bring innovative minds together to build scalable technology solution that have industrial impacts.

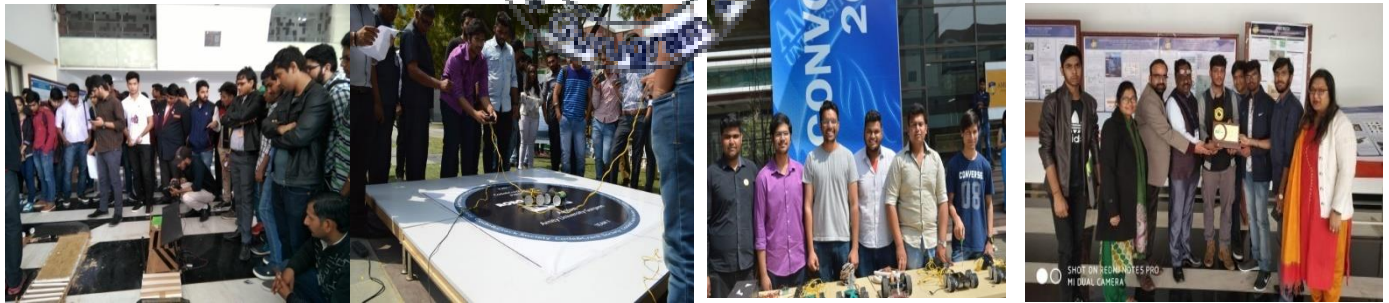


Participated in **MS-Hacks 2.0** held at LPU, organized by from 31st Aug. to 2nd Sep. 2018.





Robotic competitions **Robo Race** and **Robo Wrestling** organized during Amifest 2016-2019



48-hours competition **Robothon-2019** organized by Center of Robotics and AI.



Mr. Deepanshu Verma (B.Tech ME), Mr. Pawan Kumar Yadav (B.Tech CSE) and Mr. Hemanth Reddy (B.Tech CSE) participated in **Anveshan, North Zone Student Research Convention** held on 16-17 Jan, 2020 at Amity University Haryana in association with AIU. Students presented “IoT based Smart Dustbin” project.



Center of Robotic and Artificial Intelligence was invited at **TECH2INNOVATE**, Youth Festival, to showcase their best of innovations and technologies on 14-15 February, 2020 held at GMR Grounds, Aerocity Phase 2, Delhi.





Industrial Connect Activities

Japanese Delegation Visit at AUH

Team of nine IT and Robotic experts from Japan visited Amity University Haryana on 28th Nov., 2016.



Visit to “Launch of Collaborative Robot (Cobot)”

Universal Robots, Denmark, invited Center of Robotic & AI on “LAUNCH OF COLLABORATIVE ROBOT (COBOT)” 18th February 2016, at Hotel Le Meridian, Windsor Place, New Delhi.





Collaboration with UiPath-Robotic Process Automation Company

FDP "Design and Development of RPA Solutions" conducted by UiPath conducted at Chandigarh on 22-26 July, 2019.



**REPORT
ON**

CENTRE OF ROBOTICS ARTIFICIAL INTELLIGENCE



**Prepared and Submitted by
Amity School of Engineering & Technology Amity University Haryana
Amity Education Valley Panchgaon, Manesar Gurugram,
Haryana, 122413
October, 2020**



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3.	INDUSTRIAL COLLABORATION ACTIVITIES	20-23
4.	R&D PROJECTS	23-39
5.	PUBLICATIONS	40-41
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1. INTRODUCTION

Centre of Robotics and Artificial Intelligence was established in January, 2014 with the vision of ushering a new age of robots and making it the best place for Robotics & AI research. With the world moving towards Robotics, this Centre was established to fuel research and innovation in this field to bring enhanced precision & efficiency.

The major objectives of this Centre includes

- To boost students interest in the area of Robotics and AI and to facilitate the sharing of expertise.
- To provide outreach to local, regional, national, and international communities focusing on Robotics and AI education, competitions, research and workshops.
- To engage students in Robotics and AI related projects.
- To provide interdisciplinary research work with different schools.
- To collaborate with the industries and develop industry oriented products.

The key research areas where the Centre is focused includes

- Industrial Robotics
- Bio-Inspired Robotics
- Collaborative Robotics
- Medical Robotics
- Modular and Reconfigurable Robotics

The Centre is having various facilities in mechanical, electronic and Robotic sections. Apart from fundamental facilities in all the sections the lab is equipped with 3D Printer, high quality cameras etc. The lab has resulted several projects including AmiPi Humanoid, Human Imitating Arm, Bowling Robot, Pick & Place Robotic Arm, Voice Controlled Car, Alexa (Voice Controlled Personal Assistant Robot), Segway etc.

This report provides various activities undergone at Center of Robotic and Artificial Intelligence in terms of Competition organized and participated, Industrial Collaboration Activities, R&D projects, and Publications. Finally, the report presents the future plans of the Centre.

2. COMPETITIONS ORGANIZED AND PARTICIPATED



2.1 Makerfest-2015

Team of two students Mr. Rohan Sharma (B.Tech CSE) and Mr. Vandit Aswal (B.Tech ME) participated in Makerfest-2015, organized by Somaiya Vidya Vihar, Mumbai. Our team presented a prototype of Exo-Skeleton Legs and won the Best Exhibitor Award.

The prototype was presented to provide a support to paralyzed people for proper walking. It was consisting of motors sensors for perfect walk without any external support.

2.2 Ground Zero Summit-2015



Team of two students Mr. Kartik(B.Tech CSE) and Mr. Rohan Sharma(B.Tech CSE) participated in Ground Zero Summit-2015 held at Ashoka Hotel, New Delhi. Our team presented two projects- Line Follower and Humanoid and won the first prize.

2.3 Robothon-2016

Robothon-2016 was organized by Robothon, Hyderabad. Two teams consisting of following students from AUH were selected to participate in this event.

Team-1	Team-2
Rohan Sharma (CSE)	Priya Singh (CSE)
Vandit Aswal (ME)	Vishaka (CSE)
Dinesh Reddy (CSE)	Sudhanshu(CSE)
Gangesh Tripathy (CSE)	Aditya Soni (CSE)
Usman (CSE)	Ravinder Kaur (CSE)

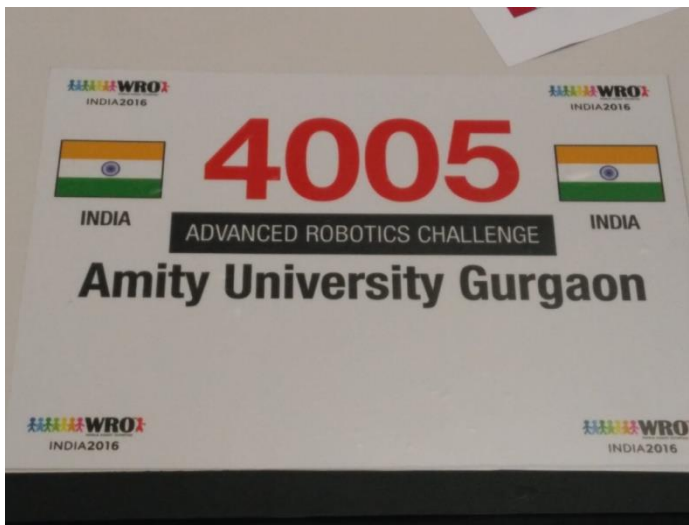


Team-1 developed a project Vehicle-to-Vehicle Communication and won the First prize. The purpose of this project was to avoid accidents due to human errors. The vehicles can communicate with each other in a specific range. Within that range the vehicle can send an alert to other vehicle, if there is probability of accident.

Team-2 presented Wearable Health Care Device that can continuously monitors the vital states in order to alert about the health. The device was able to monitor the vital states such as Pulse Rate, BPM, Oxygen etc. monitored through a hand band.

2.4 World Robot Olympiad-2016

India STEM Foundation (ISF) and National Council of Science Museums (NCSM) under the Ministry of culture are jointly organized World Robot Olympiad (WRO), an International Robotics championship.



Following three students along with one coach from AUH participated in this competition.

1. Mr. Rohan Sharma (B.Tech CSE)
2. Mr. Ousman Jallow (B.Tech CSE)
3. Mr. Gangesh Tripathi (B.Tech CSE)
4. Mr. Manoj Chaudhary (Team Coach)

The team developed and demonstrated a robot that can pick up a bowling ball from the ball rack, "see" where the target is and precisely aim to score points by knocking down as many bowling pins as possible.



Our team won at national level competition held in Netaji Indoor Stadium, Kolkata from 22nd to 23rd October, 2016 and represent the India at International level competition held in India Expo Mart, Greater Noida.

2.5 Amirobo-2016



A 48-hours competition ‘Amirobo’ was organized by Center of Robotics and Artificial Intelligence with the aims to bring innovative minds together to build scalable technology solution that have industrial impacts. Five teams were participated in this contest and come up with following products.

- Sign Language Translation Glove
- Gesture Based Home Automation
- Without GPS Navigating the Path
- Gesture Control Pick and Place Systems
- Delivery System Using Small Robots





All the products were evaluated by a panel of experts. A team consisting of Gangesh Tripathi (B.Tech CSE), Dinesh Reddy(B.Tech ECE) and Vardha Aswal (B.Tech MAE) students won the 1st prize for developing Gesture Controlled PPT and Place system. All the products were also exhibited in Innovation Gallery on the occasion of Innovation day.

2.6 Capture the Flag-2016



On the occasion of ‘Engineer’s Day’ 15th Sep, 2016, Centre of Robotics and Artificial Intelligence organized an ethical hacking competition ‘Capture the Flag’ at AUH. It was an in-house competition where 46 students from AUH were participated. The competition was conducted in two rounds where the participants were given many challenges to solve with in limited time. The challenges were based on Mathematical Logic, Password Hacking, Cryptography, Steganography, SQL Injection and Cross Site Scripting etc. The top 20 rankers of the first round qualified for second round. In second round participants were given challenges with greater difficulty level. Based on the scores earned, Mr. Pritam (B.Tech CSE), Ms. Ashu (B.Tech CSE) and Mr. Milan(B.Tech CSE) were awarded with 1st, 2nd and 3rd prize respectively. Mr. Jitendra (B.Tech CSE), Mr. Adit Paliwal (B.Tech CSE), Mr. Kartik (BCA) and Mr. Mayank (BCA) were also awarded with consolation prizes.



The purpose of this competition was to create awareness about Cyber Security among students and to generate their interest in the same field and eventually to involve them in Cyber Security related projects and research at the early stage of their degree.

All the participants showed very enthusiastic performance during whole competition. The challenges given to participants created an urge among them to learn more about cyber security..



2.7 Hack Infinity-2016

The “Hack Infinity” an ethical hacking competition was organized at C-Block Computer Lab-I on 28th September, 2016. Total 25 participants were participated in this competition. The participants were given fifteen challenges based on Web Based Puzzle solving, Cyber Forensic, Cryptography, Steganography etc. Based on the points earned Maulik Garach (B.Tech CSE), Pritam (B.Tech CSE) and Ayush Mahawar (B.Tech CSE) won the 1st, 2nd and 3rd position respectively.

2.8 IIT Bombay TecFest-2016



Mr. Rohan and Mr. Jeevesh Awal participated in Robot Sports competition “Robo Bowling” and “Robo Wrestling” organized by IIT Bombay from 17th to 18th December 2016 and award with the award of excellence.

2.9 Robo Race-2016

Ist Robo Race event was organized on 9th Feb. 2016 at AUH. Several teams from AUH and outside AUH were participated in this event. Robo Race is the competition involving bots. It is based on time trail system. The track is mainly consisting of all terrain obstacles like mud, rocks, wood, slippery inclined surface etc. AUH team consisting of P.Dinesh Reddy(B.Tech ECE), Rohan Sharma (B.Tech CSE) and Gangesh Tripathi (B.Tech CSE) won the first prize and team from GD Goenka University won the 2nd prize.

2.10 Robo Race-2017



On the occasion of AmiFest-2017 a robotic completion “Robo Race” was organized on 15th Feb. 2017. Team of Amit Kumar (B.Tech ASE), Inaam Husain(B.Tech ASE) and Vikram Saini (B.Tech ASE) won the first prize and team of Jeevesh Awal



(B.Tech CSE), Ashu Rana(B.Tech CSE) and Gulshan(Engineering CSE) won the second prize.

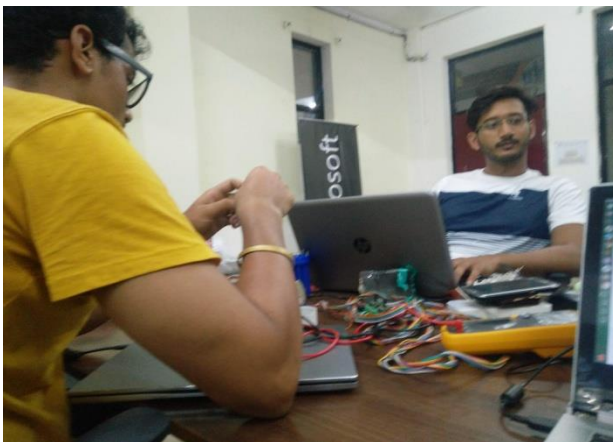
2.11 Robo Wrestling-2018



This contest was organized by AUH on 14th March, 2018. It was a competition in which two bots were placed in a circular ring. Both bots pushed each other, and the one which pushed out of circular ring loosed and other one gained the points. Maximum allowed dimension of the bot was: 20cm X 20cm X 20cm and maximum weight allowed was 4 Kg. 26 students participated in this event. The team of Gulshan Sharma (B.Tech , IPU), Yogesh Sharma (B.Tech , IPU) and Shaimal Khanna (BCA) won the first prize and team of Aman Mangla (B.Tech CSE , AUH), Manan (B.Tech CSE, AUH) and Harsh Goyal (BCA+MCA , AUH) won the second prize.



2.12 Robo Race-2018





This event was organized on 14th March, 2018 at AUH on the occasion of Amifest. Various teams were participated in this event. Team of Vishan Sharma(B.Tech, IPU), Yogesh Sharma(BCA, IPU) and Saurabh Sharma(B.Tech, AHU) won the first prize and team of Shubham Jain (B.Tech, ASET) and Sanket Jain(B.Tech, AUH) won the second prize.

2.13 MS Hack 2.0

Three students Rohan Sharma (B.Tech CSE), Ayush Deep (B.Tech CSE) and Nikhil Thakur (B.Tech BME) were participated in a competition MS-Hacks 2.0 held at Lovely Professional University, Jalandhar organized by Microsoft Technical Community from 31st Aug to 2nd Sep 2018. They demonstrated Weed Ostracizing Bot, which can detect the weed growing in the soil via camera.

2.14 Robo Race-2019



A Robo Race contest was organized on 19th Feb, 2019. The contestants were given a racing track with many obstacles. The challenge was to complete the

track within the least time by skipping minimum obstacles. Total three rounds were played to select the winner. Team of Avinash and Prerak from NIIT University, Neemrana, Rajasthan won the first prize.

2.15 Robo Wrestling-2019

On 19th Feb, 2019 second Robo Wrestling contest was organized at AUH. Several teams were





participated with their bots. The team of Prajak Anand, Aman Gupta and Avinash Yuvraj won the first prize and team of Atul, Saurabh and Esther won the second prize.

2.16 Robothon-2019



On the occasion of Amifest-2019 Centre of Robotics & Artificial Intelligence organized a 48-hours competition 'Robothon' was organized by Center of Robotics & Artificial Intelligence with the aims to bring innovative minds together to build scalable technology solution that have industrial impacts. Three teams were formed consisting of 4 students each team.





List of the participants along with the project assigned in under.

Team	Name	Course	Project Name	Problem Statement
1	Shaik Babar Ahmed	B.Tech.(MAE) 4th Sem	Smart Irrigation System	Create a smart irrigation system which would provide adequate water to crops automatically, whenever required.
	A. Yaswanth Sai	B.Tech.(EEE) 4th Sem		
	Mohammed Baquer	B.Tech(AIR) 2nd Sem		
	Sumit Kumar	B.Tech(EEE) 8th Sem		
2	Aditya C. Jaiswal	B.Tech(AIR) 2nd Sem	IOT Based Smart Parking	Develop an automated smart parking management system that would help the driver to find out some suitable parking space for his/her vehicle very quickly.
	Abhitesh Bhardwaj	B.Tech(CSE) 2nd Sem		
	P. Satwik	B.Tech(AIR) 2nd Sem		
	Aryaman Anand	B.Tech(AIR) 2nd Sem		
3	Ridheesh	B.Tech(AIR) 2nd Sem	Intelligent Medicine Reminder Box	Design a competitive product that functions as an effective method for users to take their medication more consistently.
	Rahul	B.Tech(CSE) 2nd Sem		
	Deepanshu	B.Tech(MAE) 4th Sem		
	I. Pavan Raju	M.Tech(AIR) 4th Sem		

All the projects were evaluated by a panel of experts. The team developed the Intelligent Medicine Reminder box, won the 1st prize.



2.17 Techvridhi National Level Competition 2019

Mr. Rohan Sharma (B. Tech CSC) student participated in a Machine Learning contest organized by Technospecies Global Solution in association with Entrepreneurship Cell, IIT Kharagpur in association at MIT, Karnataka from on 19th to 20th Jan. 2019. He scored 2nd position and invited for final event at IIT Kharagpur.

2.18 Techno-Cultural Management Fest

Three students Babar, Ch. Sat Revanth, Yaswanth Sai, B. Manoj Kumar and M. Lokesh from AUH participated in Robo Race contest held at BML Munjal University on 8th Feb. 2019.

2.19 Robothon-2019

Centre of Robotics & Artificial Intelligence organized 2nd Robothon competition of 2019 from 24th to 26th September. Total 19 students of different programmes were participated in the competition and resulted with five innovative projects.





List of the participants along with the project developed as under.

Team	Project Title	Participant Name	Programme & Sem.
1	Fire Detection and Extinguishing Robot (A Fire Extinguishing Robot that can help the fire fighters to extinguish fires in difficult areas)	Shaik Babar Ahmed	B.Tech.(MAE) 5th Sem
		Piyush Prasad	B.Tech.(CSE) 3rd Sem
		Nikhil Gupta	B.Tech(CSE) 3rd Sem
2	Stair Climbing Robot (Robot for different terrain and also climbing stairs)	Deepanshu Varma	B.Tech.(MAE) 5th Sem
		Pawan Kumar Yadav	B.Tech(CSE) 3rd Sem
		R. Hemanth Reddy	B.Tech.(CSE) 3rd Sem
		Aditya Vishwakarma	B.Tech.(CSE) 3rd Sem
3	Object Detection and Tracking Autonomous Robot (A Robot which identifies the objects, targets and tracks them)	S. Kiran	M.Tech(AIR) 3rd Sem
		I. Pavan Raju	M.Tech(AIR) 3rd Sem
		Harikrishnan VK	M.Tech(AIR) 3rd Sem
		Harshal Deore	M.Tech(AIR) 3rd Sem
		Md. Javed	M.Tech(AIR) 3rd Sem
4	Smart Plant Irrigation System (Robot that can automate the watering process to plants based on moisture level)	Ch. Sai Revanth	B.TECH(ECE) 5th Sem
		A. Yaswanth Sai	B.TECH(EEE) 5th Sem
5	Remote Control Solar Car With Obstacle Detection (Efficient and eco friendly car)	Vivek Agarwal	B.Tech(BME) 3rd Sem
		Dipesh Satyal	B.Tech(BME) 3rd Sem
		Rishabh Yadav	B.Tech(ME) 3rd Sem
		Raunaq Singh	B.Tech(AE) 3rd Sem
		Dalvir Singh	B.Tech(EEE) 3rd Sem

The projects were evaluated by a panel of experts. The team developed Fire Detection and Extinguishing Robot, won the 1st prize. All the projects were also exhibited in Innovation Gallery on 28th September 2019 (Innovation day).

2.20 Anveshan-2020

Mr. Deepanshu Verma (B.Tech ME), Mr. Pawan Kumar Yadav (B.Tech CSE) and Mr. R. Hemanth Reddy (B.Tech CSE) participated in Anveshan, North Zone Student Research Convention held on 16-17



Jan, 2020 at Amity University Haryana in association with Amity Students presented “IoT based Smart Dustbin” project which was highly appreciated.



2.21 TECH2INNOVATE

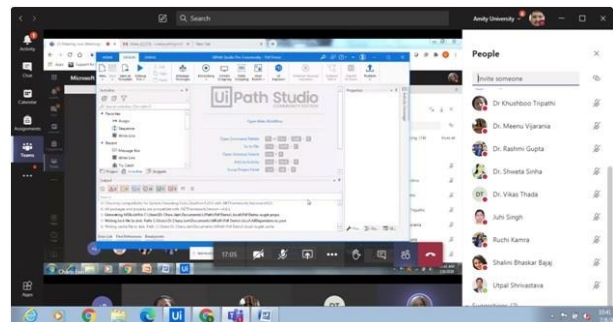
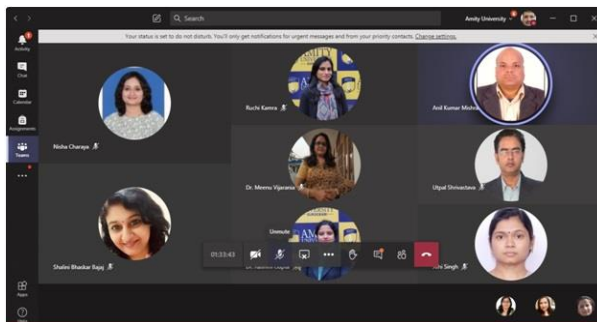
Center of Robotic and AI was invited at TECH2INNOVATE, Youth Festival, to showcase their best of innovations and technologies on 14th and 15th of February 2020. The event was held at GMR Grounds, Aerocity phase 2, Delhi.





2.22 FDP on RPA Using UiPath-2020

A FDP on Robotic Process Automation was organized from 3-9, July 2020 through Ms Team. Nineteen faculty members were participated in this FDP. The FDP was delivered by Dr. Sunil Sikka and Dr. Charu Jain.



List of Faculty members participated in the FDP

S.No.	Participant Name	University
1.	Dr. Vikas Thada	AUH
2.	Dr. Kushboo Tripathi	AUH
3.	Dr. Meenu Vijrani	AUH
4.	Dr. Rashmi Gupta	AUH
5.	Dr. Shalini B. Bajaj	AUH
6.	Dr. Anil Mishra	AUH
7.	Dr. Shweta Sinha	AUH
8.	Dr. Yojna Arora	AUH
9.	Ms. Aarti Chugh	AUH
10.	Ms. Aashima Gambhir	AUH
11.	Ms. Juhi Singh	AUH
12.	Mr. Vivek Birla	AUH
13.	Ms. Priyanka Makkar	AUH



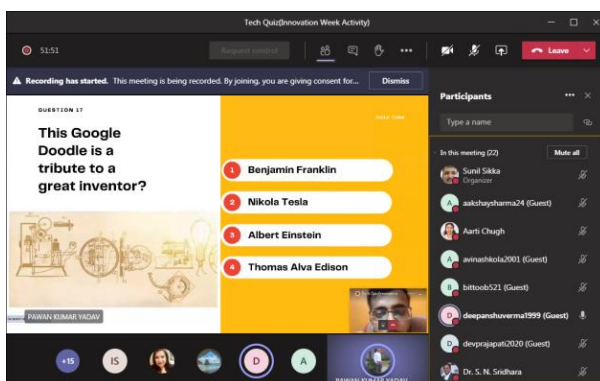
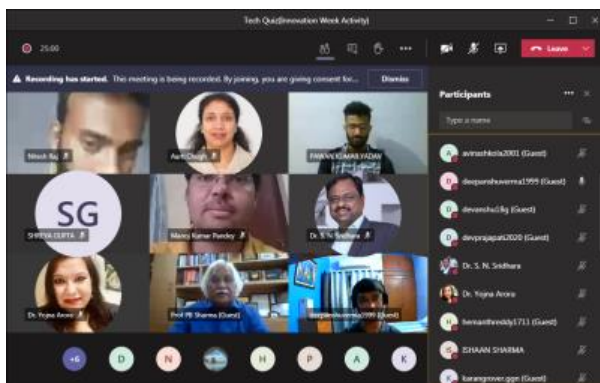
14.	Ms. Poojnam Sharma	AUH
15.	Ms. Swati Gupta	AUH
16.	Mr. Utpal Srivastava	AUH
17.	Ms. Nisha Chandra	AUH
18.	Ms. Ruchi Kamra	AUH
19.	Dr. Vivek Jaglan	Graphics Era

Robotic Process Automation is the technology that allows anyone today to configure computer software, or a “robot” to emulate and integrate the actions of a human interacting within digital systems to execute a business process. RPA robots utilize the user interface to capture data and manipulate applications just like humans do. They interpret, trigger responses and communicate with other systems in order to perform on a vast variety of repetitive tasks. Only substantially better: an RPA software robot never sleeps and makes zero mistakes.

UiPath is a global software company that develops a platform for robotic process automation. UiPath has become the first vendor of scale to bring together both process mining and robotic process automation.

Last year AUH and UIPath had collaboration under an Academic Alliance program. As a result RPA was introduced as an elective course in B.Tech(CSE/ME/ECE) final year. The purpose of this FDP was to train the faculty members to teach this course and take up RAP related projects.

2.23 Tech Quiz-2020



On 22nd September 2020, Centre of Robotics & AI organized a technical quiz with the aim to improve or enhance participants’ knowledge of recent technologies. The Quiz was conducted through online mode on MS Team platform. Total 17 students were participated in the quiz. The participants were asked questions based on recent IT based technologies.

Mr. Ishaan Sharma(BCA) won the first position. Mr. Piyush Prasad(B.Tech-CSE student) and



Ms Shreya Gupta(B.Tech-BME) were remain the runner up. Mr. Deepanshu Verma(B.Tech ME) and Mr. Pawan Verma(B.Tech-CSE) coordinated the quiz.

List of participants

Student Name	Programme & Sem
R. Hemanth Reddy	B.Tech CSE, 5th Sem
Piyush Prasad	B.Tech CSE, 5th Sem
Dev Jhinjarwal	B.Tech CSE, 5th Sem
Akshay Sharma	MCA 5th Sem.
Nikash Pradhan	MCA 5th Sem.
Naman Verma	MCA 5th Sem.
Rohit	MCA 5th Sem.
Karan Grover	BCA 3rd Sem.
Devanshu Gupta	BCA 5rd Sem.
Ishaan Sharma	BCA 5rd Sem.
Shreya Gupta	B.Tech BME, 3rd Sem
Bittoo	B.Tech CSE, 3th Sem
Kola Avinash	B.Tech CSE, 5th Sem
Nikhil Gupta	B.Tech CSE, 5th Sem
Dalvir singh	B.Tech EEE, 5th Sem
Paras Yadav	Bsc(H) Physics, 3rd Sem.
Pesala Sri Datta	B.Tech CSE, 5th Sem

2.23 INCUBE-AMITY-2020

AMITY UNIVERSITY, NOIDA

INCUBE - AMITY
AN INNOVATIVE IDEA COMPETITION

A competition to showcase your creative skills and entrepreneurial capabilities

Winners will get an opportunity to get their prototypes developed for free along with patent filing and merit certificate.

THEMES

- Waste management
- Smart Vehicles
- Healthcare
- Save Water
- Renewable Energy
- Security
- Smart Communication
- Agriculture
- Disaster management

SUBMISSION PERIOD:
15TH - 26TH AUGUST

For registration refer to website
<http://incube.amity.tech/>

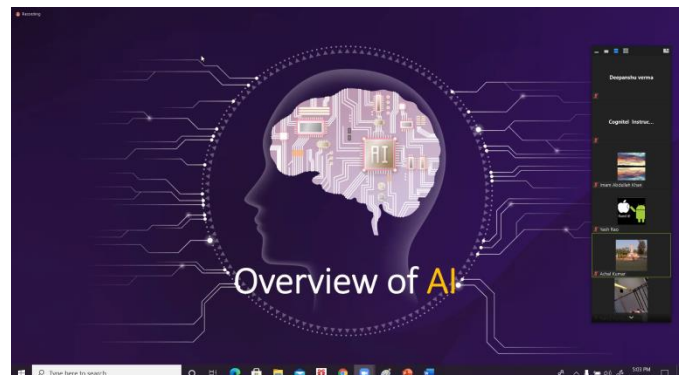
amityincubegroup.com | phone: 987329236 | fax: 91102893



Mr. Deepanshu Verma (B.Tech ME), Mr. Pawan Kumar Yadav (B.Tech CSE) and Mr. R. Hemanth Reddy (B.Tech CSE) participated in INCUBE-AMITY-2020, An Innovative Idea Competition, organized by Amity University Uttar Pradesh. Students presented ideas of IoT based Smart Dustbin and Voice based Smart Health Care Robotic Assistant. Both the ideas were highly appreciated.

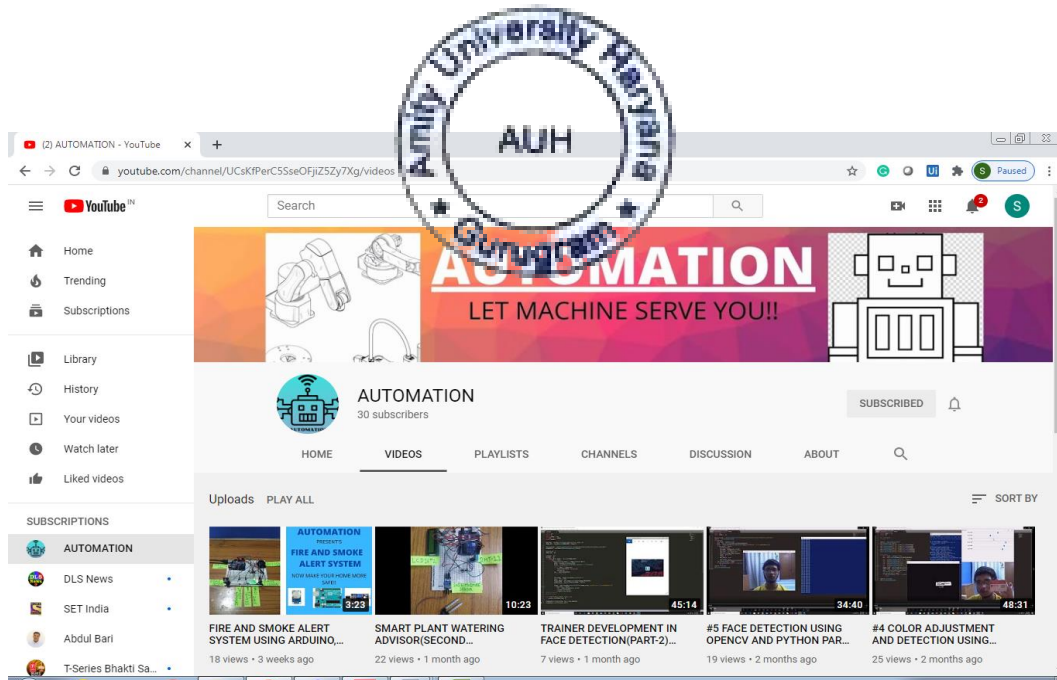
2.24 Training on Artificial Intelligence-2020

Mr. Deepanshu Verma selected to attend the training on Artificial Intelligence provided by Huawei from 5th to 16th Oct. 2020.



2.25 Youtube Channel (Automation)

Mr. Deepanshu Verma, B.Tech ME Final Year Student started a Youtube Channel named Automation where he is presenting how to develop various innovative projects.



<https://www.youtube.com/channel/UCsKfPerC5SseOFjiZ5Zy7Xg>

3. INDUSTRIAL COLLABORATION ACTIVITIES

3.1 Japanese Delegation Visit



A team of 9 IT and Robotic experts from Japan visited Amity University Haryana on 28th Nov., 2016. Some of the team members were from the World Robotic Olympiad (WRO). Some of them were CEO, Marketing head and staff of Afrel Co. Ltd., Fukui, Japan. Afrel provides technical education using robots and curriculum development.



Following members were visited

- 1) Mr Masashi Yoshida
- 2) Mr. Akinori Shigemi
- 3) Mr. Ryosuke Shimizu
- 4) Mr. Mitsunori Fukuchi
- 5) Ms. Keiko Akino
- 6) Ms. Tomoko Hanedad.
- 7) Mr. Nana Takayama
- 8) Mr. Shun Ueno
- 9) Mr. Yasuhide Kobayashi

The visit was organized to discuss the modalities for collaborative projects in the field of Robotics and Artificial Intelligence. During the open discussion session various Robotic and Artificial Intelligence related technologies were discussed. Hon'ble Vice Chancellor appreciates the Japanese technology and wishes some collaborative research and innovative projects. The delegation interacted with faculty members and students to share the innovative work in the field of Robotics and Artificial Intelligence. The delegation also visited to the Centre of Robotics and



Artificial Intelligence Lab and appreciated the AUH work in the field of Robotics and Artificial Intelligence.

3.2 Visit to “Launch of Collaborative Robot (Cobot)”

Universal Robots, Denmark, organized the “LAUNCH OF COLLABORATIVE ROBOT (COBOT)” on Thursday, 18th February 2016, at Hotel Le Meridian, Windsor Place, New Delhi.

Following were present from AUH

1. Dr. Sunil Sikka, ASET
2. Mr. Manoj Choudhary, ASET

The launch was started with the Address Note of Mr. Pradeep David, General Manager, India, Universal Robots. During his address he explained the difference between Traditional Industrial Robot and the COBOT. He also discussed the latest safety standard adhered by COBOT. After the address note of Mr. Pradeep David, the Chief Guest of the event Mr. H.E. Peter Taksoe-Jensen, Ambassador Denmark, addressed the audience. During his address he appreciated the initiatives of our Hon’ble Prime Minister. He also emphasized on the need of skilled labor force to use such type of technologies. After the Chief Guest address, Mr. Esben Ostergaard, Founder & Chief Technical Officer, Universal Robots, presented his talk about COBOT. During his talk he demonstrated the features of new version of COBOT and discussed its various applications such as Laptop Assembly, Drilling, TV Studio, Cocking, and Physiotherapy etc. At the end Mr. Aakash, Manager-Operations, Bajaj Auto, demonstrated various applications of COBOT used at Bajaj Auto.





3.3 Industrial Visit to Encon Systems, Gurgaon

An Industrial visit was conducted to Encon Systems, Gurgaon on 6th Jan., 2016. The company is located in Pace City-II, Sector 37 Gurgaon.

Following were present in the visit

Maj. Gen. (Retd.) V.K.Narang, Director ASET & AIIT, AUH

Dr. Sunil Sikka, Associate Professor, CSE, ASET, AUH

Mr. Manoj Chaudhary, Head, Centre for Robotics & Artificial Intelligence

The main objective behind the visit was to discuss the modalities for joint research projects in the field of Robotics. Mr. Naresh Kantoor, Managing Director of the company introduced with their team members. After then we were demonstrated with some projects carried out in the Integration Department of the company. We were demonstrated with the projects such as Sorting of Currency, Nail Polish Filling, Cigarette Vending, Chocolate Packaging etc. The company mainly provides the automation solutions to discreet and sequential applications across a range of industries. We were also demonstrated with the Kit they are using to train their fresh employees.

After survey of the company we had detailed discussion on the subject “How we can collaborate with Encon Systems for Research projects in the area of Robotics”. Mr. Kantoor also showed the interest in joint research projects and agreed to undergo on some projects in future.

3.4 MoU with UiPath-Robotic Process Automation Company

UiPath is the fastest-growing enterprise software company having partnerships with the world’s best consulting and BPO firms. UiPath mainly deals in Robotic Process Automation (RPA). Robotic Process Automation is the technology that allows anyone today to configure computer software, or a “robot” to emulate and integrate the actions of a human interacting within digital systems to execute a business process.



As per the MC made with UiPath on implementation of UiPath into curriculum, four faculty from ASET attended a training program on “Design and Development of RPA Solutions” at Chandigarh from 22.7.2019 to 26.7.2019 at Chandigarh.

4. R&D PROJECTS

Following are some projects developed at Center of Robotics and AI. These projects were also displayed during various events such as Innovation, Amifest etc.

4.1 AmiPi-Humanoid Robot

Developed by: Mr. S. Kiran, Mr. I. Pavan Raju M.Tech(AIR)

Guide: Mr. Manoj Panday(ECE Deptt.)

Co-Guide: Dr. Sunil Sikka(CSE Deptt.)

Mr. Nitesh Raj(Robotics Lab)



AmiPi is an autonomous social intelligent humanoid robot. It can interact with humans through conversation and touch screen. It is designed with human body proportions and developed with 3D printing technology. It is 80cm in height and 2.5kg in weight with 18 degrees of freedom for natural and expressive movements. It uses different machine learning algorithms and artificial intelligence techniques to learn, interact and adapt with humans and surroundings. AD-XL12A Dynamixel servo motors are used for each joint. Raspberry/Orange pi processor is used as a main micro-processing unit for the robot.

Applications:

- Serves as a personal companion.
- Can be used as a kit for Educational purposes.
- Further Research and Development in Image processing and Artificial intelligence.

4.2 Human Imitating Robotic Arm

Developed by: Rohan Sharma (B.Tech CSE)





Guide: Dr. Sunil Sikka
Mr. Nitesh Raj

The objective of this work is the development of a system capable to control the hand movement of a robot by mimicking the gestures of an actor captured by multiple sensors present on the actor's hand. An accelerometer on each finger tracks the motion of each individual finger to provide an accurate value to move the motors. Atmega 328pu is used to provide motion to servo motors and record Analog data from kinematic sensors. In Future, this type of prototype can be made capable enough to lift objects heavier than humans can. With the right set of hardware, it can perform extremely critical tasks with precision and smooth motion.

Applications

- Replicate Human Motion using sensors
- Heavy object Lifting
- Pick and Place (most industries, automobile, a lot for food industry)
- Third hand: the arm carries the object and the operator can work on it easily
- Medical Field (Doctors can operate this as a virtual arm)

4.3 Smart Dustbin

Developed by : Deepanshu Verma B.Tech(MAE)

Guide : Mr. Nitesh Raj

The objective of this work is the development of a system capable of converting biodegradable waste into manure in less period of time. We can use this dustbin in kitchen to convert kitchen waste to manure. It consists of three stage of processing waste: Crushing process, Grinding process and Chemical reaction with high flow of atmospheric air.



It has ultrasonic sensor that will sense a person in range of 50cm from dustbin and make the dustbin to open automatically and then close it and start process step by step.

First the waste enters crusher where it is being crushed then it enters grinder where it is been grinded to convert the waste into small fine particles then it goes to container box where it is treated with chemical and high flow atmospheric air to make the reaction process faster and reduce the time of converting waste to manure. This manure can be used in farming or gardening as fertilizer for plants.

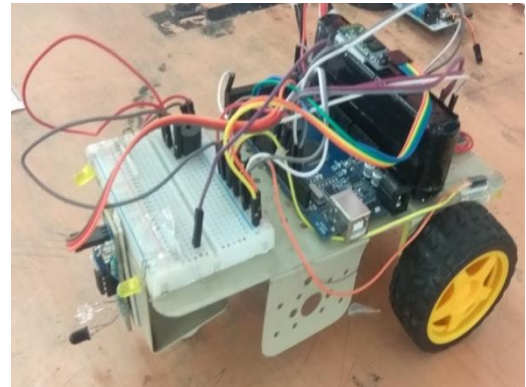


Applications:

- Convert waste to manure
- Reduce time of conversion
- Low labor cost
- Home waste can be recycled
- This manure can be used as fertilizer for plants in farming

4.4 Voice Controlled Smart Car

Developed by: Saurabh Sharma and Sahil Gupta
(B.Tech CSE)



This project is consisting of a smart, voice controlled robot car using Arduino mega 2560. Voice controlled robotic system is controlled through voice commands received via android device. The integration of control unit with bluetooth device is achieved using a bluetooth module to capture and read the voice commands. It operates on the Forward, Backward, Right, Left and Stop commands.

The robotic vehicle operates as per the commands received via android device. The transmission uses an android application for transmitting the data. The receiver end reads the commands and interrupts them into controlling the robotic vehicle. The android sends the commands to move the vehicle in Forward, Backward, Left and Right. The communication between the android device and receiver is sent as serial communication data. Arduino program is designed to move the motor through a motor driver circuit as per the received commands from the Android device.

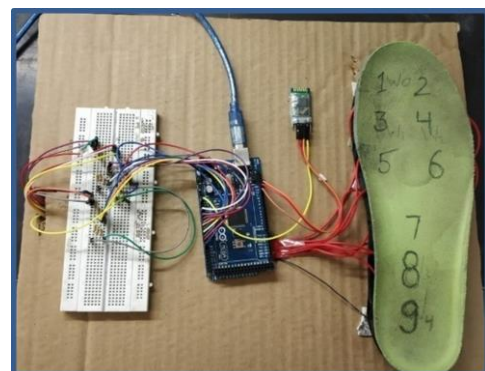
Applications

- Can be integrated with collision prevention technology by sensing obstacles.

4.5 Weight Sensing Foot sole

Developed by : Nikhil Thakur (B.Tech BME)

The aim of this project is to determine real time visualization of pressure for studying the weight





distribution in foot. It provides information about Gait mechanics and has a wide range of applications, i.e. in clinical situations and in sports. Its aim is to help people recover from injury promoting a faster rehabilitation. Various pressure sensitive sensors placed throughout inside the sole, this means that some cross/relationship calculations have made between adjacent sensors. With the data it will be possible to create a real-time pressure map which is displayed to a mobile screen with help of Bluetooth for immediate diagnosis by doctor or/and recorded for later playback.

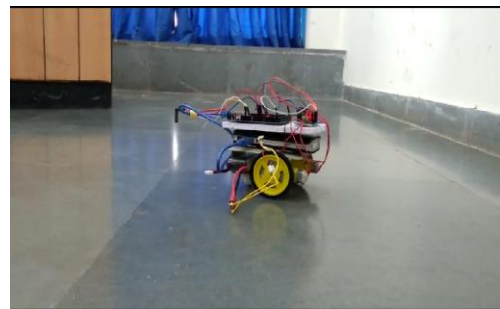
Applications:

- To determine the weight distribution among the foot.
- For Gait analysis of the foot and find the Gait abnormality.
- To determine the cause of injury or on play sport activities.
- Amount of stress during heavy weight exercises.
- To design the customised foot sole for an individual suffering from some problem or athlete to maximize the performance.

4.6 Android Controlled Car

Developed by : Atul Garg (BCA)

The aim of this project is to develop an Arduino car which is controlled by mobile application through Wi-Fi connectivity. An IR sensor is used as a parking sensor which helps to park car properly without any damage. Esp module is used for the communication and motor driver L293d is used to move the car. The user sends the commands from the mobile phone via Wi-Fi which acts as a client and send the command to Esp module which acts as server then, Esp module send the command to Arduino then Arduino send the command to the motor driver and car moves as per the given command.



Applications:

- Operate car from mobile phone.



- Can be use as spy car in defence.
- For parking the car safely without any damage.

4.7 Musical Lamp

Developed by : Deepanshu Verma (B.Tech ME)

Guide : Mr. Nitesh Raj

The aim of this project is to make your home more attractive as it has different effects of lights on different musical beats. This will make people more attracted towards music and towards that place. This musical lamp can also act as stress remover as many research says that if you listen music for some time it relaxes your body and you again become active and can perform much better than others. This musical lamp represents a new way to listen music with music base and led light effects.



Applications:

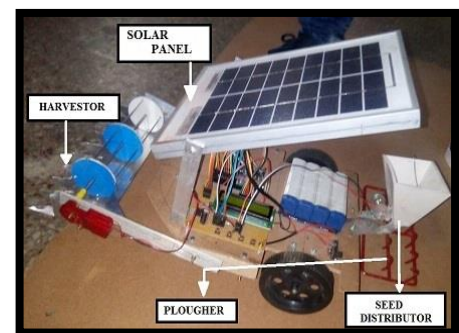
- Makes you relax, happy and joy full.

4.8 AgRo-Bot

Developed by: Mr. Gangesh Tripathi, Mr. Shubham, Mr. Sagar and Ms. Neha Kaushik

Guide : Mr. Manoj Pandey

Agro-Bot is an advance agriculture robot. The working of an autonomous robot is based on field parameters i.e. length and width. Prototype of an autonomous Agro-Bot is designed for multitasking such as seed sowing, ploughing and harvesting. It is a four-wheeled vehicle which is controlled by ATMEGA328 microcontroller (Arduino) as master controller, power supply is provided by solar panel which is eco-friendly to the environment. It will also help in decreasing the use of non-renewable sources of energy and will not pollute the environment. Other accessories are slaves performing specific operations. Its working is based on the precision





agriculture which enables efficient seed sowing at optimum depth and distances between crops and their rows.

Applications:

- Crop scouting – Accurate and timely data can be collected in an inexpensive manner with the presence of automated systems in the crop having sensors to evaluate health and status of the crop.
- Weed mapping - It is a method used for recording the density and position of various weed species using the automated machines.
- Robotic weeding -Several methods can be employed to kill the weeds. For example, the interface between the soil and the root is broken by tillage and wilting of weed plants.
- Micro spraying – In this, care should be taken not to damage the crop or disturb the soil while killing the weeds. This can be achieved using micro spray that releases very small amount of herbicide directly on the weed leaf. Automated machines can locate the position of an individual weed plant and spray the herbicide through a set of nozzles.
- Robotic irrigation – Water can be applied at variable rates over the predefined areas using a robotic irrigator developed in the form of a mechatronic sprinkler.

4.9 Smart Medicine Box

Developed by: Deepanshu Verma (B.Tech ME)

Rahul Kumar (B.Tech CSE)

Ridheesh Amarthya(B.Tech AIR)

I.Pavan Raju (M.Tech AIR)

The Smart Medicine Box is a utility box designed for both patients and nurses, it helps them keep track of medication and also reminds them when it is time to take medication or when to refill the empty medicine compartments. This should prove useful especially for patients with Alzheimer’s disease or Dementia as they no longer have to keep track of when they have to take medication rather just take or refill medication when the buzzer reminds them to. The box is equipped with an IR sensor which allows the patient to turn off the alarm just by standing in front of the box rather than fiddling around with a button.





There is a LED in each box which will automatically get on with timer and will help us in knowing from which box we have to pick the medicine, so the patients will not take wrong medicine.

Compared to the regular medicine box, the Smart Medicine Box will significantly release the nurses or patients burden to frequently preload pills and keep manual track of them.

Applications:

- In Hospitals to care multiple patients with different medication timings.
- Home use for patients suffering from Dementia or Alzheimer.

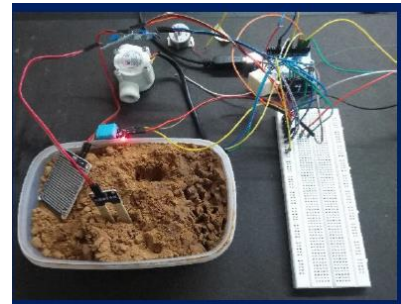
4.10 IoT based Smart Irrigation System

Developed by: Shaik Babar Ahmed (B.Tech ME)

Yaswanth Sai (B.Tech EEE), Mohammad Baquer (B.Tech AIR)

Sumit Kumar (B.Tech EEE)

The objective of this work is the development of an **IOT** based Irrigation System. Irrigation system tailors watering schedules and run times automatically to meet specific landscape needs.



These controllers significantly improve outdoor water use efficiencies. Unlike traditional irrigation controllers that operate on a preset programmed schedule and timers, smart irrigation controllers monitor Temperature, Soil condition, Humidity and Rain fall to automatically adjust the watering schedule to actual conditions of the site. For example, as outdoor temperatures increases or rain fall decreases, smart irrigation controllers consider onsite-specific variables, such as soil type, sprinklers 'application rate etc. to adjust the watering runtimes or schedules. The Soil Conditions and status can be monitored online via <https://thingspeak.com/channels/707226>

Applications:

Save Time -The system does all of the work

Save water -The system is much more efficient than traditional time based systems

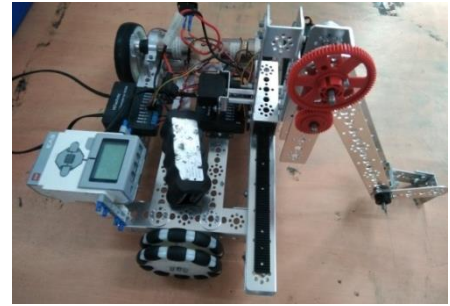
Save Electricity –This System is capable of warning when the water level is low and shut down power supply when necessary to save electricity



4.11 Robotic Arm (Tetrix)

Developed by: Gangesh Tripathi(B.Tech CSE)

This Robotic arm is made by Tetrix and Lego kit and also a programmable manipulator. This is facilitated by using Tetrix components wherever possible. The system consists of a variety of prefabricated aluminum components that are designed to be easily modified and connected to one another.



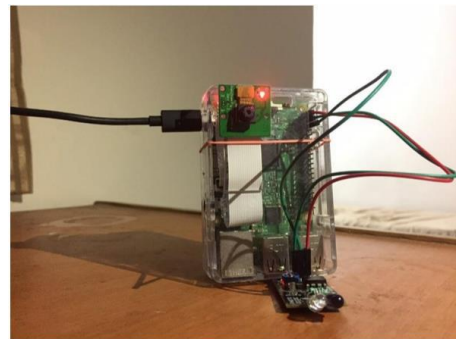
Also includes high torque DC gear motors, servos, and motor drivers. These components are compatible with the LEGO Mind storms system. This Robotic arm is controlled by Ev3 microcontroller.

Applications:

- Access unevenly placed parts (for scanning, selecting...)
- Pick and place.
- Third hand: the arm carries the object and the operator can work on it easily.

4.12 Intruder Detection System

Developed by: Jeevesh Awal, Piyush Raj, Arminder Singh, Mansi Tripathy and AshuRana, Computer Science Engineering & Bachelors of Computer Applications students



An Intruder Detection System (IDS) is powered by the Raspberry Pi and a Pi camera. The main principle of the

circuit is to provide security. This is based on PIR sensor with an IC that produces a siren. The PIR sensor detects the IR radiations emitted from humans and it produces a digital output. This system can be installed at the main door of your home or office and you can monitor it anywhere in the world using internet.

This project uses SMTP (Simple Mail Transfer Protocol) to raise an alarm by sending an email with a photo attached to a predefined email id when the camera is triggered. The image attached also has the time stamp of when it was clicked, which enables the user to see the real time status on their mail via the internet.

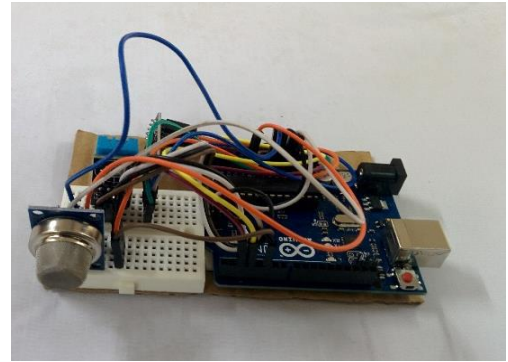
Features:



- It is cost effective and works on just 5V/40mA power.
- Its compact size for installation makes it easy to install it at any corner of the room.

4.13 IoT based Temperature and Humidity Analyzer

Developed by: JeeveshAwal, Piyush Raj, Arminder Singh, Mansi Tripathy and AshuRana, Computer Science Engineering & Bachelors of Computer Applications students



It is a simple yet effective solution to measure the temperature and humidity of our surroundings. This IoT based temperature and humidity analyzer captures value

using sensors and then analyzes and compares the values remotely from any location in the world. Data collected by temperature and humidity analyzer over a period of time can be displayed graphically.

This project monitors humidity and temperature over the internet using Thing Speak which shows all the data regarding the current humidity and temperature values. It is accomplished by the data communication between the Arduino, DHT Sensor and ESP 8266 WiFi module. The analyzer works on thing speak server, and the data analysis is done on cloud using Math works online tools.

Features:

- It is cost effective and works on just 5V/40mA power.
- Its compact size makes it easy to install at any corner of the room.

4.14 Gesture Controlled Vehicle

Developed by: Ayush Deep(B.Tech CSE)

This gesture controlled vehicle using a flexi sensor is one kind of vehicle which can be operated by the movement of hand by placing an flexi sensor on it. This project is divided



into two parts transmitter device and receiver device. Where a gesture device works as a transmitter device and a vehicle works as a receiver device. When a sensing device (flexi sensor) is placed on the hand, then it will send signals to the transmitting device which further send



signal to vehicle for the required operation. This project includes transmitter section and receiver section. The components used to build this project are Flexi Sensor, Arduino UNO, Arduino Nano, Motor, RF Transmitter-Receiver, Resistor, LED, Gloves and Battery. The Flexi Sensor is an essential device in this project.

Applications

- These vehicles can be used in military applications to operate robots.
- These vehicles can be used in the construction field.
- These vehicles can be used in industries to control trolley and lift.

4.15 Raspberry Eye

Developed by:

Rohan Sharma(B.Tech CSE)

This is a useful tool. It has the ability to control it remotely, therefore can be used to implement any security system. A web-enabled remote servo camera puts the end user in control of the experience. The Raspberry Pi provides a perfect base platform for creating internet-connected devices.



Applications:

- Face Recognition.
- Security systems at public places.

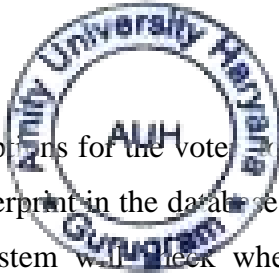
4.16 Electronic Voting Machine

Developed by :

Mr. JeeveshAwal, Mr. Piyush Raj,Mr. Arminder Singh,
Ms. Mansi Tripathiy, Ms. Ashu Rana,
Computer Science Engineering & Bachelors of Computer Applications

The electronic voting machine (EVM) is a secure and portable machine, which can be used to vote. Here voter's fingerprints are used to identify them and enable





them to cast a vote. There are two options for the voter to register using fingerprint or to cast a vote using an already registered fingerprint in the database. During voting, when the voter keeps their thumb in the scanner, the system will check whether it matches with the pre-stored impressions in the database. If it matches then system will allow the voter to poll his vote, otherwise prevent the voter from voting. If a user tries to cast a vote for a second time, the machine will not allow the user to vote and display a message saying that they have already casted their vote. When any valid voter presses any button representing the respective candidate, the voting value will be incremented by one each time. After the whole voting process ends, we will press the result button to see the results. When the “result” button is pressed, the Arduino calculates the total votes of each candidate and shows it on a LCD Display.

Features:

- After a user votes, the machine stays in a locked mode for five seconds to prevent the user from double voting.
- The machine also turns on a buzzer when a person votes to indicate that their vote is casted.
- After the voting process has taken place, the machine calculates the result, shows the number of votes on a LCD display and finds out the winning candidate.

4.17 Smart Mirror

Developed by:

Mr. Rakesh Gautam, Mr. Ankit Saxena

Computer Science Engineering

Guide: Dr. Vivek Jaglan, Ms. VeenuVijarania

Computer Science Engineering



Smart Mirror is the emerging concept in this fast changing IT world. It is an alternative to a normal mirror used in our homes. It offers features like showing data, time, weather, news and push - notifications, etc. custom-tailored for the person standing in front of the mirror. They're part of an optimistic vision of the future that imagines a world where screen sand data are everywhere, ready to feed you whatever information you need at a moment's notice. Smart-mirror is voice controlled, integrates with a growing number of services, and can control your smart devices.

Applications:



- It can replace your normal mirror and help you get ready smartly.
- It keeps you updated with the latest news and weather information.
- It shows all your important notifications right in front of you.
- It even notifies you if you are running late for work.
- Commercially, it will be very successful as it embraces the idea of smart homes.

4.18 IOT based Smart Parking System

Developed by: Aditya C. Jaiswal(B.Tech AIR), Abhitesh Bhardwaj (B.Tech CSE), P. Satwik(B.Tech AIR) and Aryaman Anand (B.Tech AIR)



The IOT based Smart Parking System relies on IR sensors to detect whether a car is parked at a parking slot or not, and this information is updated onto a website/app which a user can access. User is also able to book the slot according to their choice.

It provides the user information about the availability of parking slots in real time, and this system can greatly improve the quality of parking facilities as it makes the process easier and convenient for the people.

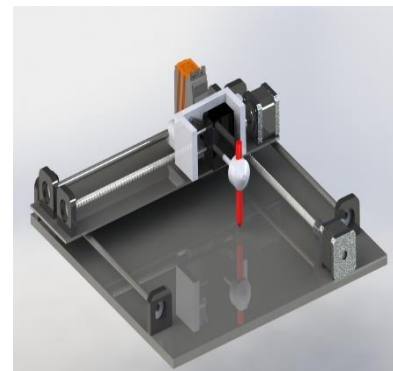
Features:

- Unused parking slots can be found from using a website.
- This system can be used to provide real time information about availability of parking slots and users can book slots remotely, using the internet.
- A lot of time can be saved because time is not wasted in searching for parking space.

4.19 CNC 2-D Plotter

Developed by: Shaik Babar Ahmed (B.tech 5th sem, M.E)

CNC (Computer Numeric Control) 2D Plotter is a CN (Computer Numeric) based plotter that offers the fastest way to efficiently produce very large drawings/engravings. Pen plotters will be able to print/engrave by moving tip of the tool across the surface area of paper/wood. This means that plotters are vector graphic devices rather than raster graphic devices.



Applications:



It can draw PCB layouts / vector graphics / images with high precision.

The pen of the machine can be replaced by a laser to make it work like a laser cutting machine.

The pen can also be replaced with a wood engraving pen and be used for engraving on wood.

The pen can also be replaced with a powerful drill so that it can be used for both milling and drilling purposes.

4.20 Fire Detection and Extinguishing Robot

Developed by

Babar Shaik (B.Tech, 5th Sem, M.E.)

Nikhil Gupta (B.Tech, 3rd Sem, C.S.E.)

Piyush Prasad (B.Tech, 3rd Sem, C.S.E.)

Fire fighting is an important but dangerous occupation. Robots are designed to find a fire before it rages out of control, could one day work with firefighters greatly reducing the risk of injury to victims. The robot can avoid obstacles, detect the fire location and move towards it successfully. It will release water from the nozzle by activating the pump and douse the fire successfully.

Features:

- Obstacle Avoidance (using ultrasonic sensor)
- Flame Detection (using flame sensors)
- Fully Autonomous Vehicle

Applications:

- Could be used to fight fires in hazardous locations.
- Could be used to enter small spaces that are impossible to be accessed by a person.

4.21 Remote Control Solar Car with Obstacle Detection

Developed by : Dalvir Singh (B.Tech, 3rd Sem, E.E.E)

Dipesh Satyal (B.Tech, 3rd Sem, B.M.E)

Vivek Agarwal (B.Tech, 3rd Sem, B.M.E)

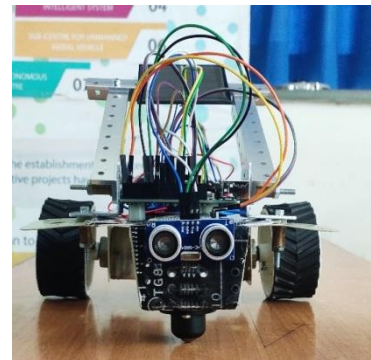
Raunaq Singh (B.Tech, 3rd Sem, A.E)

Rishabh Yadav (B.Tech, 3rd Sem, M.E)

The Remote Control Solar Car with Obstacle Detection is car that works on rechargeable batteries which is recharged through solar panels.

There is a programmed ARUDINO which gives command to motor driver and Bluetooth.

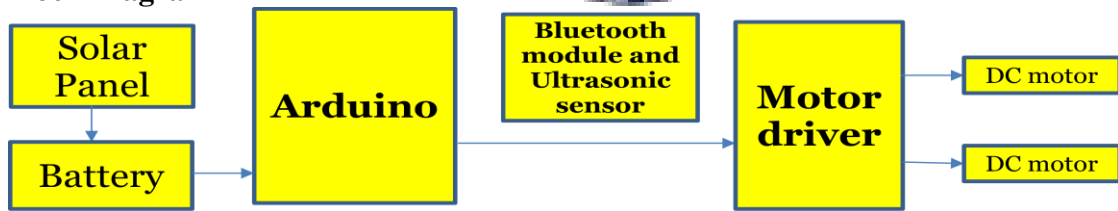
This car is equipped ULTRA SONIC sensors which can detect obstacle and stop on it's own





when the obstacle is within the distance of 10cm. The car can also operate with the voice command which has to be given in the app.

Block Diagram



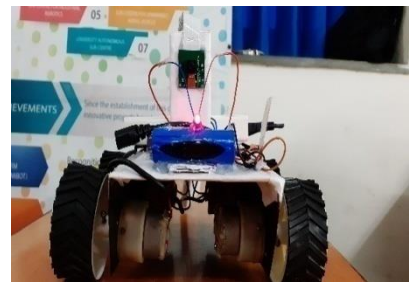
Applications:

- Low Range Mobile Surveillance Devices
- Military Applications (no human intervention)
- Assistive devices (like wheelchairs)

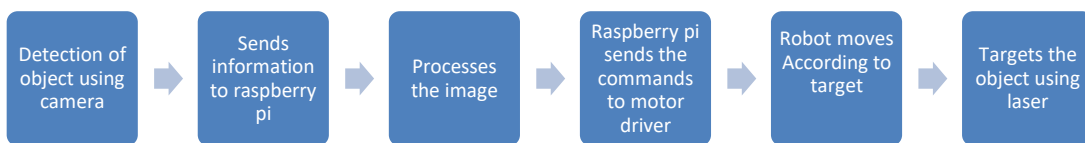
4.22 Object Detection and Tracking Autonomous

Robot

- Developed by:** S.Kiran (M.Tech, 3rd Sem,AIR)
 I.Pavan Raju (M.Tech, 3rd Sem,AIR)
 HariKrishnan VK(M.Tech, 3rd Sem,AIR)
 Harshal Deore (M.Tech, 3rd Sem,AIR)
 Mohammed Javed (M.Tech, 3rd Sem,AIR)



This autonomous robotic model uses computer vision algorithms with which it can automatically detect the targets like ball/ balloon/human etc. which are in the range. Once after the objects are detected, the robot will lock the target area and move towards the target aiming to it. The objects are trained using raspberry pi and raspberry pi camera. It keeps on targeting and tracking the target the object with laser weapon. This model can be used for military purposes to find and shoot enemies automatically.



Applications

- Used in military purposes for tracking and shooting.
- Ball tracking in sports.



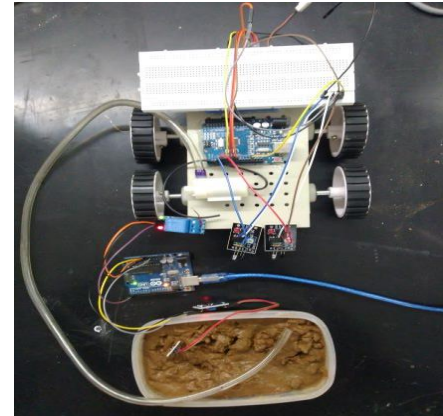
- Self-driving cars.

4.23 Smart Plant Irrigation System

Developed by : A .Yaswanth Sai (B.Tech,5 Sem, E.E.E)

Ch. Sai Revanth (B.Tech,5 Sem, E.C.E)

Some plants need optimal moisture and other environmental conditions for its proper growth. Our model can be used to sense moisture level of soil of plants and automatically supplies the water to each individual plant according to their need. This ensures proper growth of plant.



Features:

- The moisture of the plants can be sensed and watered regularly without human intervention.
- The watering of plants can be done at the right time.

4.24 Stair Climbing Robot

Developed by:

Deepanshu Verma (B.Tech, 5th Sem, M.E.)

Pawan Kumar Yadav (B.Tech, 3rd Sem, C.S.E.)

Hemanth Reddy (B.Tech, 3rd Sem, C.S.E.)

Aditya Vishwakarma (B.Tech, 3rd)



This robot is based on wheels can move only on flat surface and even when there is a hurdle in front of any wheel the robot cannot cross the hurdle or go on it. What if the robot can not only be able to cross the hurdle but also can climb the stairs. This robot can be controlled by a mobile application and it can cross any hurdle, even in front of only one wheel. This robot is quite Flexible while crossing the hurdles.

This rover has an Arduino UNO, Motor Controller, Bluetooth Module and 100 RPM motors that give it sufficient power to climb the obstacles which will come in front of it. The app connectivity also gives a good feature of controlling it wirelessly and this also reduces electronic component usage. The whole structure of it is made up of PVC pipes that give it extra stability to the structure.

Applications:

- It can climb the stairs.



- It can move on uneven surfaces coming in its path.
- It can move in desert like areas.

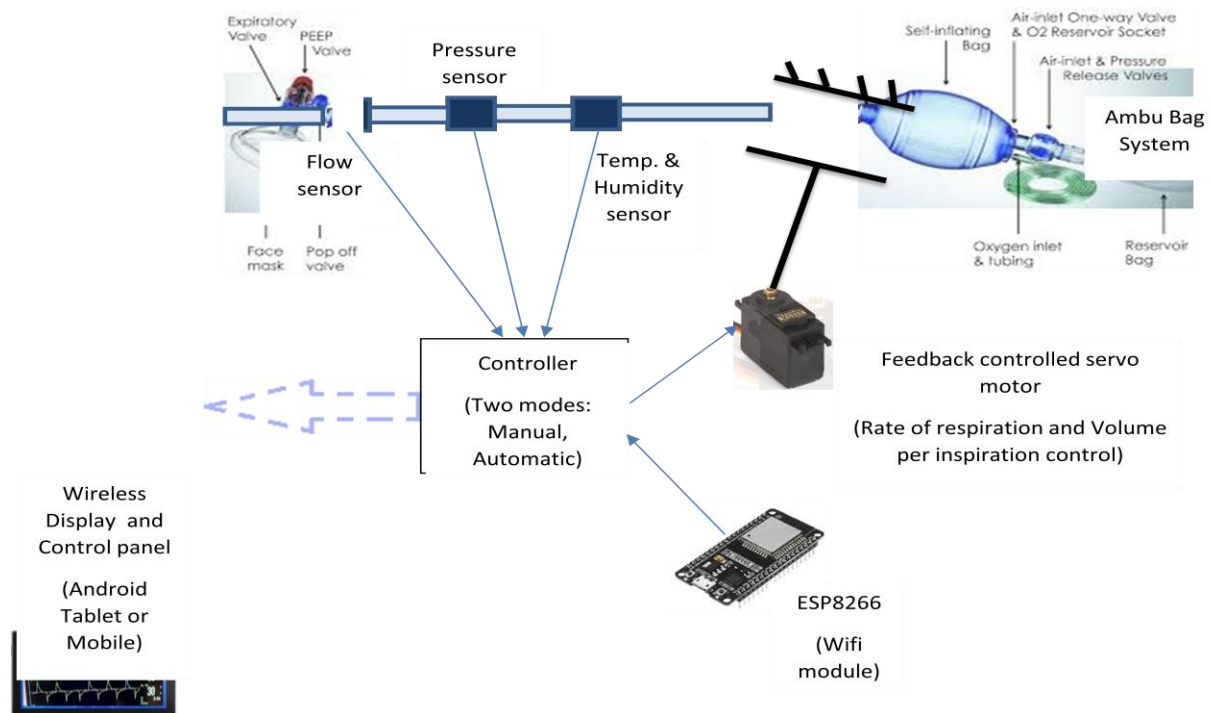
4.25 IoT based Low Cost Ventilator

Developed by:

Mr. Manoj Kumar Pandey (Assistant Professor, ECE, ASET, AUH)

Mr. Sandeep Jogi (Assistant Professor, BME, ASET, AUH)

Dr. S. N Sridhara (Director, ASET & AIIT, AUH)



This ventilator design is customized, especially for the clinical requirement of Covid-19 subject. In general, ventilator is used for clinical condition of low ventilation in the lung due to: an increase in resistance of airway, increase in compliance of lungs, decrease in compliance of lungs, inflammatory symptoms in lungs and blockage in the airway due to mucus or some other reason. This ventilator can provide lifesaving oxygen at a rate set by doctor. It has capability to display respiration rate, oxygen moisture and temperature in real time on android display. It uses IoT technology hence can be used at home as well and display may be attached in hospital. Upgrade of this ventilator is under development in which fully automatic feature is being implemented with the help of real time feedback of patient lung parameters.

Features:



- Required respiration rate can be set by Doctor
- Real time monitoring of air/oxygen moisture and temperature
- All displays and controls are made on android display
- IoT based – remote display and control possible
- Pure oxygen can be supplied with required flow when attached with oxygen cylinder
- It is reliable and can be used 24*7 nonstop

5. Publications

- Charu Jain, Dr. Priti, Aarti Chugh ‘Offline Signature Verification using Adaptive Resonance Theory’, page no 95-99, Volume 2, Issue 1, March 2015 in IJCA in May 2014.
- Aarti Chugh, Charu Jain, Dr. Priti, Learning Approach For Offline Signature Verification using Vector Quantization Offline, in International Conference on Emerging ICT for Bridging Future in Dec 2014(Springer)
- Neerja Arora, Charu Jain ‘GMM for Offline Signature Forgery Detection’ September 2014 in Confluence 2014 held at Amity University Noida(IEEE Xplore).
- Swati Garg, Manoj Pandey, Yukti Adya, Vasu Gambhir, Manisha Yadav “Face Recognition Techniques–A Review” in International Journal of Scientific Research, Volume 4, Issue 7, pp. 164-166, July 2015
- Juhi Singh, “A Parameterized comparison of fuzzy logic , neural network and neuro-fuzzy system: A literature ”, IJCSMC, vol.5, May 2016.
- Dr. AK Raghav, Manoj Pandey, Pavleen, Shuvam, Harivansh, Ankur, Yash , Rahul , Deepak, Sandeep “Obstacle Avoidance & Motion Planning by Stochastic Processes, Spatial Description, Sensor Integration and Trajectory Generation in the Domain of Embedded Systems, Mechatronics, Artificial Intelligence, Robotics and Machine Learning” in International Journal of Current Research, Volume 8, Issue 4, pp. 29360-29371, April 2016
- Deepak, Prakshi, Adala, Prashant, Ritakshi, Rajat, Manoj Pandey “Smart Electronic Wheelchair Using Arduino and Bluetooth Module” in International Journal of Computer Science and Mobile Computing, Volume 5, Issue 5, pp. 433 – 438, May 2016
- Juhi Singh, “Comprehensive study of deep learning”, IJRITCC, Vol. 5 Issue 5, May 2017.



- Poonam Sharma, Akansha Singh, "Era of Deep Neural Networks: A review", ICCCNT, July 2017.
- Poonam Sharma," Automatic Vehicle Detection from Traffic Videos Using Morphology and Rule Based Technique",International Journal for Research in Applied Science & Engineering Technology, vol. 5, Issue 7,pp. 844-848, 2017.
- Nisha Charaya, "Human Authentication Based on Dorsal hand Veins-A Review" International Journal of Pure and Applied Mathematics, Volume 119, Issue 16, June 2018.
- Poonam Sharma, Komal, Sarika, "Human Activity Recognition Using LSTM Networks", IJCSE, Vol 6, issue 3, pp. 165-167, 2018.
- Manoj, Jagandeep Kaur, "IOT Based Smart Vehicle Parking Management System", presented in International Conference on Electrical, Electronics, Computers, Communication, Mechanical and Computing (EECCMC) (IEEE conference) at Priyadarshini Engineering College, Vellore, Tamil Nadu on 28th & 29th January 2018.
- Yojna Arora "A Study on Future of Driverless Cars", in International Journal of Converging Technologies and Management, Vol 4, Issue 1, June 2018.
- Charu Jain, Dr. Priti, Dr. Ajay Rana Fuzzy Logic Based Adaptive Resonance Theory for Offline Signature Verification, International Journal of Pure and Applied Mathematics, Volume 118 No. 16, pp. 681-694, 2018.
- Shubham , Sonal, Manoj, Sweta, "Design and Development of IoT based Intelligent Home Automation System", International Journal of Emerging Trends in Engineering Research (SCOPUS), Volume 8, Issue 7, July 2020.
- Anasua, Manoj, Janakkumar B Patel, "Intruder Information and Security Systems for Agricultural Applications- A Review ", presented in IEEE sponsored national conference (NC4IPS-2020) at KIT, Kanpur, 6-7 March 2020.
- I Pavan Raju, Sunil Sikka, Ankit Garg, Manoj Pandey, "A Brief Review of Recent Advancement in Humanoid Robotic Research "Volume IX, Issue VI, JUNE/2020, Mukta Shabd Journal, ISSN No: 2347-3150.
- I. Pavan Raju, Sunil Sikka, Ankit Garg and Manoj Kumar Pandey, "Design, Fabrication and Implementation of Face Recognition on a Low-Cost Humanoid Robot" in Journal of Artificial Intelligence and Soft Computing Research(JAISCR), 2020 (Submitted)

6. Current Status and Future Plans



The Centre is also involved in conducting Master Technology Programme in Artificial Intelligence and Robotics. The programme is interdisciplinary in nature and spans a range of disciplines such as computer science, mechanical engineering and electronic engineering. In addition to that the Centre is also involved in various Artificial Intelligence, Robotics and Machine Learning based courses which are also part of UG/PG curriculum.

Future planning includes

- a. Strengthening industry connects and developing projects based on industry requirements by 2021.
- b. Involving new students in AI and Robotics projects by conducting workshops and other events by July 2021.
- c. Upgradation of IoT based ventilator project to make it fully automatic with the help of real time feedback of patient lung parameters by June, 2021.
- d. Conducting training on RPA for students to develop bots by July 2021.
- e. Submitting research projects and filling patents by 2021.





Centre of Nanotechnology Amity University, Haryana

Members



Prof. Atul Thakur (Director, Nanotechnology)



Dr. Ankur Kaushal (Associate Professor, Nanotechnology)



Dr. Lucky Krishnia (Assistant Professor, Nanotechnology)

Thrust areas of Research

- Nanomaterials development and characterization, 3 D printing and fabrication technology
 - Development of hydroelectric cell
 - Development of point of care diagnostic devices using Biosensors
 - Synthesis of Diamond at atmospheric pressure

Achievements

• Research and publications (37)

• Competitive research funding (5)

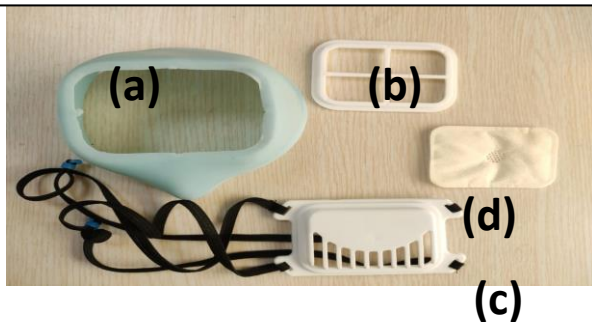
• National collaboration (12)
International collaboration (12)



- International vis. (2)
- Ph.D. students (09)
- MoUs (7)
- Invited talks (12)
- Patents Filed (15)

Ongoing research projects

- 1. Name of the project:** Water analysis and treatment by Nanotechnology of Bilaspur pond
Funding agency: Gurukul, Haryana
Amount: Rs. 44,20,000
PI: Prof. Atul Thaku
- 2. Name of the project:** Electrochemical DNA sensor for the diagnosis of scrub typhus
Funding agency: SYST, DST
Amount: Rs. 34,42,560
PI: Dr. Ankur Kaushal
- 3. Title of the project:** An Antimicrobial Face-Mask Using Nano-particle Coating
Funding agency: TIDE 2.0 MIE TY G3C, Amity University
Amount: Rs. 7,00,000
PI: Dr Atul Thakur



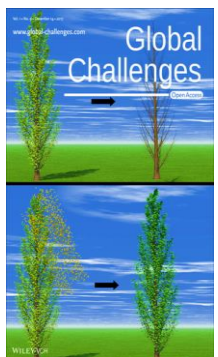
- (a) Mask's main body made up from Thermoplastic Polyurethane
- (b) Filter lower cover made up of Poly Lactic Acid (PLA) material
- (c) Filter upper cover made up of PLA material
- (d) 4 layered filter



Portable Potentiostat for instant disease diagnosis



Glimpse of activities at Centre of Nanotechnology



AMITY UNIVERSITY GURUGRAM
International Symposium on Nanoscience and Nanotechnology
Organized by Amity Centre of Nanotechnology
3 Day Virtual Event

E-certificate will be provided to all the participants.
Note: Attendance to all sessions is compulsory to receive the e-certificate.

Convener
Prof. Atul Thakur
Director, ACNT

Co-Convener
Dr. Ankur Kaushal
Associate Professor, ACNT

Co-Convener
Dr. Lucky Krishnia
Assistant Professor, ACNT

For any queries:
Email us at: acntsypaugh@gmail.com

GOOGLE MEET Meet us at Google Meet: Link will be shared daily with the registered participants to join the sessions.

AMITY UNIVERSITY GURUGRAM
International Symposium on Nanoscience and Nanotechnology
Organized by Amity Centre of Nanotechnology
3 Day Virtual Event

Prof. P.B. Sharma
Hon'ble Vice Chancellor
Amity University Haryana
Visionary Guidance

Prof. Vikram Kumar
Shanti Swarup Bhatnagar Awardee
CARE, IIT Delhi
Inaugural Address

Prof. An-Cheng Sun
Yuan-Ze University, Taiwan
Talk on: Enhanced Perpendicular Magnetic Anisotropy of Pr-Fe-B Thin Film by Spontaneously Precipitated Fe-Si underlayer.

GOOGLE MEET Meet us at Google Meet: Link will be shared daily with the registered participants to join the sessions.



List of Patents filed from AUH

S. No.	Application No.	Title of the Patent	Date
1.	2018110115011	Cobalt substituted m-type barium ferrite synthesized via co-precipitation method for radar absorbing material	12-03-2018
2.	201811020412	Synthesis of Al ³⁺ doped BiFeO ₃ nano-ceramics having improved electrical properties with low leakage current density	31-05-2018
3.	201811025523	Nanosized substituted lithium ferrite for NTC (negative temperature coefficient) device applications	09-07-2018
4.	201811031254	Synthesis of nano particles of cobalt and nickel ferrite showing antifungal effect against phytopathogenic fungi	21-08-2018
5.	201811043159	High response at low power tungsten doped Ni-Zn ferrites resistive sensor for hydrogen gas	14-09-2018
6.	201811051124	Biodegradable tape for therapeutic purposes as well as other commercial applications	21-09-2018
7.	201811045280	Biodegradable, Eco- friendly and Non Toxic Dye for cosmetic and non cosmetic applications	30/11/2018
8	CRN3480	Barium ferrite nanoparticles by green synthesis for agricultural application	12/04/2019
9	CRN3414	Chloroplast Nanoparticles Exhibiting Artificial Photosynthesis For Energy Generation And Environmental Cleaning Applications	10/05/2019



Deepak Kala



Shilpa Taneja



Deepika Sindhu



Sindhu S Nair



Kishore Ajay



Dinesh Kumar



Manish Bharti



Sarthak Kharbanda

List of Publications and cover page of Journal from AUH

1. A.V.Trukhanov, V.G.Kostishyn, L.V.Panina, V.V.Korovushkin, V.A.Turchenko, P.Thakur, A.Thakur, Y.Yang, D.A.Vinnik, E.S.Yakovenko, L. Yu.Matzui, E.L.Trukhanova, S.V.Trukhanov, Control of electromagnetic properties in substituted M-type hexagonal ferrites, Journal of Alloys and Compounds, 754(2018) 247-256, **IF = 4.175**
2. S.V. Trukhanov, A.V. Trukhanov, V.A. Turchenko, An.V. Trukhanov, D.I. Tishkevich, E.L. Trukhanova, T.I. Zubar, D.V. Karpinsky, V.G. Kostishyn, L.V. Panina, D.A. Vinnik, S.A. Gudkova, E.A. Trofimov, P. Thakur, A. Thakur, Y. Yang, Magnetic and dipole moments in indium doped barium hexaferrites. Journal of Magnetism and Magnetic Materials 457 (2018) 83–96. **IF=3.046**
3. Kush Rana, P. Thakur, M. Tomar, V. Gupta, A. Thakur, Investigation of cobalt substituted M-type barium ferrite synthesized via Co-precipitation Method for Radar Absorbing Material in Ku-band (12–18 GHz), , Ceramics International, 44 (2018) 6370-6375.**IF= 3.45**
4. S.V.Trukhanov, A.V.Trukhanov, L.V.Panina, V.G.Kostishyn, V.A.Turchenko, E.L.Trukhanov, An.V.Trukhanov, T.I.Zubar, V.M.Ivanov, D.I.Tishkevich, D.A.Vinnik, S.A.Gudkova, D.S.Klygach, P.Thakur, A.Thakur, Y.Yang, Temperature evolution of the structure parameters and exchange interactions in $BaFe_{12-x}In_xO_{19}$, Journal of Magnetism and Magnetic Materials 466 (2018) 393-405. **IF= 3.046**
5. ShilpiChandel, Preeti Thakur, Shyam Singh Thakur, VivekKanwar, Monika Tomar, Vinay Gupta, Atul Thakur , Effect of non-magnetic Al^{3+} doping on structural, optical, electrical,



dielectric and magnetic properties of BiFeO_3 nanoceramics.. Ceramics International 44 (5)(2017) 4711–4718. **IF= 3.45**

6. S Chandel, P Thakur, M Tomar, V Gupta, A Thakur , Investigation of structural, optical, dielectric and magnetic studies of Mn substituted BiFeO_3 multiferroics, Ceramics International 43 (16) (2017), 13750-13758 **IF= 3.057**
7. Preeti Thakur, Parul Sharma, J.L. Mattei, P. Queffelec, Alex V. Trukhanov, Sergei Trukhanov, Larissa V. Panina, Atul Thakur, Influence of cobalt substitution on structural, optical, electrical and magnetic properties of nanosized lithium ferrite, Journal of Materials Science : Materials in Electronics, 29 19 (2018) 16507–16515 **IF= 2.324**
8. S Chandel, P Thakur, SS Thakur, A Sharma, JH Hsu, M Tomar, V Gupta , Investigation of excess and deficiency of iron in BiFeO_3 , Materials Chemistry and Physics 204 (2018), 207-215 **IF=2.210**
9. Abhilash Pathania, Sanjay Bhardwaj, Shyam Singh Thakur, Jean-Luc Mattei, Patrick Queffelec, Larissa V. Panina, Preeti Thakur, **Atul Thakur** , Investigation of Structural, Optical, Magnetic and Electrical properties of Tungsten doped Ni-Zn Nano-ferrites. Physica B: Condensed Matter, 531 (2018) 45-50. **IF= 1.453**
10. Parul Sharma, Adikshita Sharma, Monica Sharma, Nikhil Bhalla, Pedro Estrela, Aditya Jain, Preeti Thakur, and **Atul Thakur**, Nanomaterial Fungicides: In Vitro and In Vivo Antimycotic Activity of Cobalt and Nickel Nanoferrites on Phytopathogenic Fungi. Global Challenges (9)(2017) 1700041(1-7)
11. N. Makhsudsho, Y. Nicolay, Y. Rodion, P. Larissa, B. Anna, Morchenko Alexander, Thakur Atul, Stress Effects on Magnetic Properties of Amorphous Microwires Subjected to Current Annealing, EPJ Web of Conferences 185(2018), 04030

Papers accepted:

1. Abhilash Pathania, Preeti Thakur, Monika Tomar, Vinay Gupta, Alex V Trukhanov, Sergei V Trukhanov, Larissa V Panina, Ulrike Lüders, Atul Thakur, [Development of tungsten doped Ni-Zn nano-ferrites with fast response and recovery time for hydrogen gas sensing application](#), Results in Physics, <https://doi.org/10.1016/j.rinp.2019.102531>, **IF 3.042**.
2. Kritika Saini, Ankur Kaushal, Dinesh Kumar. Multiplexed STL and PLC based specific genetic marker for early detection of Salmonella Enterica and Listeria Monocytogenes in milk samples. Annals in Food Science.
3. Kritika Saini, Ankur Kaushal, Dinesh Kumar. Rapid detection of Salmonella Enterica in raw milk samples using stn gene based bio sensor.3 Biotech.



Projects Sanctioned:

1. DNA biosensor for the diagnosis of Scrub Typhus.
Funding Agency: DST
Project Cost: 35 Lakhs
2. Electrochemical DNA sensor for the diagnosis of Leptosprosis.
Funding Agency: ICMR
Project Cost: 25 Lakhs

Projects Submitted:

1. **Indo- Russia**
Title: “Effects of charge ordering on magnetic, electric and microwave properties of strongly correlated multicomponent oxides with a mixed valance of iron ions”.
Russian team leader Prof. Larissa V. Panina from Institute of Novel materials and nanotechnology, National University of Science and Technology (NUST MISIS), Moscow, Russia.
2. **Indo-Egypt collaboration Under DST**



Title: "Green synthesis of Zinc substituted Copoly Nanoferrites for Agricultural applications"

Egyptian PI :Prof Nasrallah M. DeGz, National Research Centre, Dokki, Cairo.

3. **DRDO :**

Title: Development of novel magneto-dielectric substrate material for miniaturisation of antenna for fuze telemetry applications

4. **TBRL**

Title: "Antenna Miniaturization for Radio Proximity Fuze"

5. **TBRL**

Title: "High response at low power Tungsten doped Ni-Zn ferrites resistive sensor for Hydrogen gas"

Courses to be proposed

1. B.Tech and M.Tech/ B.Sc and M.Sc in Convergence Technologies: Food, Nutrition and Health
2. B.Tech and M.Tech in Nanomedicine

Ph.D Scholars at the Centre:

1. Jyoti
2. Deepak Kala
3. Sidhu
4. Ajay Kishore

List of MoUs from AUH

1. MoU with SAMARA University in Russia for collaboration on BRICS Project
2. MoU with YZ University in TAIWAN to collaborate on Indo Taiwan Project
3. MoU with CYCU- Taiwan
4. MoU with National Changhua University
5. Industrial MoU with Cosmoferrite Limited
6. MoU with GB Pant Govt Institute (in Process)
7. MoU with Class one systems for product development on biosensor (in Process)



Represented Amity University Haryana at Birmingham as Invited Professor Conference organized by Royal Society of Engineering UK, Fully funded event, 27-29 September 2017

VISITING PROFESSOR AT ROYAL ACADEMY OF ENGINEERING- UK



Professor Atul Thakur
Amity University Haryana



Invited Professor at UBO-France during 6 Dec 2017-12 Jan 2018



Invited
Prof at
LABSTICC
FRANCE



Visit of Prof. Valadimir Paveleyev
from Russia @ AUH





International Conference on Nano-Structured Materials and Devices 2018



INTERNATIONAL CONFERENCE ON NANOMEDICAL SCIENCES (ISNS) 2018





DGME DIRECTORATE OF INDIGENISATION @AUH



Interview in College Dunia

Mail - athakur | Inbox (145) - at | 2019 BRICS Call | Reproducible | Editorial Mana | About me - Pro | Global C

https://collegedunia.com/news/c-25516-interview-dr-atul-thakur-professor-and-director-at-amity-university

INFO COURSES & FEES ADMISSION 2019 **NEW** REVIEWS CUTOFF - MAT PLACEMENT GALLERY SCHOLARSHIP

Dr. Atul Thakur is a firm believer of hard work and says "Success can be delayed but not denied"

Interview by Bhawna Rawat

collegedunia:

Dr. Atul Thakur

Director - Centre for Nano-Technology
Amity University Gurugram





Amity Centre of Nanotechnology, organized a Faculty Development Programme with two senior scientists from DRDO, Sh. Prateek Kishore, Scientist H, Outstanding Scientist & Additional Director and Sh Pramod Soni, Scientist F, Joint Director, TBRL (Terminal Ballistics Research Laboratory) on 7th May 2019





Participated in an inspiring lecture by Prof. Yee Shyi CHANG, Professor National Tsing Hua University on “Building Manufacturing Capability for competing globally-Lessons from Taiwan” on 1st August 2019 at the FICCI Auditorium, New Delhi.



Professor, National Tsing Hua Univ. CSO, Grenergy MicroElectronic System Inc.
Founder, PHIG Solar 3D Agriculture Partner, Empire Industry Ltd., Listed CANADA
CSO, TCELL International Holding Cofounder, BOD Indepay Ltd., INDIA
Advisor, Beijing Showonder Tech. Inc. Chairman, National Assembly, 2nd Round

Dr. Yee-Shyi CHANG Ph.D(Cantab), M.P.
Central Adv. Comm. Member, KMT, TW

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M: +886-926-121188 China: +86-13701196682(WeChat#)
Email: 13331172684@189.cn yeeshyi@mltech.com.tw
6F, No. 86, Sec. 1, Roosevelt Rd., Zhongzheng Dist., Taipei, Taiwan



Other activities

1. Invited delegate in an event organized by CII and Japanese Agency JICA at India Habitat Centre New Delhi on 14th September 2017. (Very helpful in bringing Industry and academia together).
2. Hosted a renowned Prof Saideep Rathanam the Grandson of Father of Engineering Sir Vishveshwaraiah at AUH on 26 October 2017
- 3.
4. Visit to AUUP to attend an invited talk on 18/07/2018
5. Delivered a Presentation About AINT on 25/7/2018 at AUH Orientation 2018
6. Hosted Prof. (Dr.) Arundeeep Ahluwalia for a talk on Geo Materials in National Building at AUH on 3/08/18
7. Attended meetings on Drone Project at AUUP on 8th April and 15 May 2018.
8. Co-ordinator of Poster and Model presentation for Innovation day.



9. Co-ordinator of the defence Cell
10. Visited Amity University Rajasthan in October 2018 to complete the course of Nanotechnology. Conducted the session exams and submitted Four Set of Question Papers.
11. Delivered an invited talk entitled Dielectric Spectroscopy to Masters students in workshop on Spectroscopic Techniques on 20-09-2018 at AUH
12. Board of Studies constituted for AINT
13. Revised the course contents of open electives AINT
14. Guided 6 Master students for project work.
15. Delivered an Invited Lecturer on “X-Ray Diffraction” in workshop as AUH to PG students on 2 November 2017.
16. Helping and guiding the researchers in project writing and submission at different funding agencies
17. Industry visit to Cosmoferrite at Chandigarh from 7/7/2018-13/7/2018
18. Led AUH team to One Day Workshop at Terminal Ballistic Research Laboratory Chandigarh for academic research collaboration and made presentation on research activities on September 10th and 11th 2018
19. External Expert in Interview panel at Amity University Rajasthan on 04.05-2018.
20. Hosted Mr Ravin Vyas, Advisor to Defence Cell on 23rd October 2018.
21. Hosted Sh Sanjeev Katoch, General Manager, Cosmoferrite on 14 th September for strengthening the industrial-Academia tie up.
22. Delivered a talk in Short Term Course Organized by PEC during 18-24,2018
23. Participated in FDP organized by ASAS on 21 Nov 2018
24. Participated in the orientation programme 2019.
25. Participated in Indo French Seminar organized by CEFIPRA during 18-20 Feb 2019
26. Participated in GLP workshop on 16-17 May, 2019 conducted by DST
27. Delivered a talk in FDP organized by ASET during 8-12 July 2019



Progress Report-2020



Amity University Haryana Gurugram Vision and Mission Statement

Amity Stem Cell Institute is aimed at to developing world class academic programs and research infrastructure to produce trained scientists in the field of molecular medicine and stem cell-based regenerative medicine, to address unmet needs of the society and contribute towards making India Atam-Nirbhar towards developing innovation driven industries.

Human Pluripotent Stem Cells (PSC)-based regenerative medicine field has witnessed remarkable progress in the last two decades. Derivation of human embryonic stem cell lines in 1998, followed by development of methodologies to generate donor-specific induced pluripotent stem cell (iPSC) lines from adult somatic cells by the use of defined transcription factors, in 2007, has made it feasible to generate donor-specific customized cell lineage of choice, under appropriate differentiation condition, for developing personalized therapies. Significant technological advances have also been recently made in the field of Molecular Medicine. Newer technologies have made it feasible to sequence the whole human genome, identify molecular signatures of disease onset, and biomarkers of disease progression. Similarly, significant advances have been made in characterizing the molecular mechanisms of different disease, including cancer.

Given that cancer incidences are on the rise in India, due to increasing urbanization, changing food habit and increasing environmental pollution. Among the current cancer therapeutic strategies includes surgery followed by chemo- and/or radiation therapy. A significant progress has recently been made towards developing effective cancer immunotherapy approaches in the Western Countries, however, extremely high cost of these treatments makes them unaffordable for most Indian cancer patients. Therefore, there is an urgent need to develop trained workforce in the country who can not only meet the need of the innovation driven industry in the fields of Molecular Medicine and Stem Cell Technology, to develop affordable therapeutics in India.

In this context, Amity Stem Cell Institute at the Amity University Haryana, Gurugram, Haryana, established in 2018, aims to produce trained scientists, academicians and entrepreneurs in the field of molecular medicine and stem cell-based regenerative medicine, to meet the upcoming need for cutting edge therapeutics, and innovation driven industries in the country.



At ASCI we have three full time faculty. In addition, we have faculty from other school who help in our teaching needs. All our faculty are PhD, with good research profiles.

ASCI Faculty:

1. Dr. Arvind Chhabra, Professor & Director, ASCI
2. Dr. Manoj Kashyap, Associate Professor, ASCI
3. Dr. Suresh Kalangi, Assistant Professor II, ASCI

Additional Contributing Faculty:

4. Dr. Vimal Kishore, Associate Professor, ASET
5. Dr. Ankur Kaushal, Associate Professor, ACNT
6. Dr. Lucky Krishania, Assistant Professor, ACNT

We now discuss in details our progress so far, on academic front, on research front, and also in extension activities front.



Discussed below is our progress on:

- A. Academic front
- B. Research front
- C. Extension activities.

A. Academic Program Development:

(i). Academic Programs Developed Since Inception of the Stem Cell COE:

1. Minor Degree in Stem Cell Technology Program was started from August, 2018. We now have two batches of students in our Minor in Stem Cell Technology program, with 10 and 6 students each respectively. Third batch is anticipated to start this semester.

2. Following approval of our BSc and MSc in Molecular Medicine and Stem Cell Technology (MMSCT) programs by the Board of Studies (BOS), Academic Council and the Department of Higher Education, in 2018-2019, we successfully started BSc and MSc in MMSCT from July, 2019, with 01 and 06 students in our first batches. The second batches of the BSc and MSc programs have now started, with 02 and 03 students enrolled, so far.

(ii). Future Plans on Academic Front:

- 1. Planning to strengthen and consolidate these programs is underway.
- 2. Approval for Certificate in Molecular Medicine and Stem Cell Technology has also been secured and will be initiated once laboratory infrastructure comes up with approval of in process planning board.
- 3. PhD in Stem Cell Technology and PhD in Molecular Medicine programs are also being developed and will be started from next academic session.
- 4. Presently ASCI has three faculty, including Dr. Chhabra, who are involved in bulk of teaching duties of our existing programs.

Three faculty from other departments are also contributing in our teaching efforts.

Additional requirement of two faculty, one for bioinformatics and one for stem cell technology, has been submitted for implementing above discussed future plans.



B. Research Programs Development

We have made significant progress on research front as well, as discussed below:

Research Infrastructure: We are working on developing laboratory infrastructure for class room teaching and research purposes. Planning board has been submitted towards this, and approval is pending.

Research Publications: Seven research manuscript were published SCOPUS indexed journals from 2018-2020, two are presently under review, and found are under preparation.

Books/Book Chapter Publications: Two book chapters were published in 2019-2020 by Dr. Chhabra. One more chapter in a book, of which he is the Co-Editor, is in preparation.

Patents: To date, 11 patents have been filed by ASCI faculty.

Research Grants Received/Submitted: In 2020, we received Three research grants. We also submitted grant proposals, two of which two advanced to the second stage, despite not getting funded.

International and National Research Collaborations: We have initiated expert guest lecture series at the ASCI. This has helped us establish several national and international collaborations. Joint research papers and joint research projects are being developed with these collaborators.

Future Plans: We will continue to work on improving our research infrastructure and research output. Four research manuscripts and one book chapters are in process. Additional research grant applications, in collaboration with other Institutes are under review/under development. Among these includes an RO1 grant application submitted, under Indo-US scheme from ICMR and NIH, to study the Effect of Environmental Pollutants on Health.

We now provide a detailed account of our research output so far:

(i). Research Publications:

1. Vats M, Bhardwaj S, **Chhabra A***. Green Synthesis of Copper Oxide Nanoparticles using *Cucumis sativus* (cucumber) Extracts and their Bio-physical and Biochemical Characterization for Cosmetic and Dermatologic Applications. J. Of Endocrine, Metabolic and Immune Disorders-Drug Targets (EMD-DT), 2020. (In Press) (IF: 1.93).

2. Shatendra Sharma, Monika Vats, Jyotsna Sharma, Arvind Chhabra, R. K. Rakesh Kumar and Cheng-Hsin Chuang, Synthesis, Characterization and Photocatalytic activity of Tin oxide Nanocrystals, 2020, Current Nanoscience Journal (In Press) (IF: 1.8).

3. Cervantes JL, Oakb E., Garcias J, Liud H, Lorenzinid P, Batra D, **Chhabra A**, Salazar J, Rocad X. Vitamin D modulates human macrophage response to Mycobacterium tuberculosis DNA. Tuberculosis, 2019 May; 116S:S131-S137 (IF: 1.8).



4. Kumar P, Sah AK, Tripathi G, Kashyap A, Tripathi R, Rao R, Mishra PC, Mallick K, Husain A, Kashyap MK (2020). Role of ACE2 receptor and the landscape of treatment options from convalescent plasma therapy to the drug repurposing in COVID-19. Mol Cell Biochem Oct 7; 2020. (DOI: 10.1007/s11010-020-03924-2), PMID: 33029696 (IF: 2.795).

5. Sharma J, Balakrishnan L, Kaushik S, Kashyap MK (2020). Editorial: Multi-Omics Approaches to Study Signaling Pathways. Front Bioeng Biotechnol 8:829, 2020. (DOI: 10.3389/fbioe.2020.00829), PMID: 33014991 (IF: 4.21).

6. Sharma J, Balakrishnan L, Kaushik S, Kashyap MK (2020). Editorial: Multi-Omics Approaches to Study Signaling Pathways. Front Bioeng Biotechnol 8:829. (DOI: 10.3389/fbioe.2020.00829), PMID: 33014991(IF: 2.8)

(ii). Book Chapters/Books:

1. Vats M*, Tanisha, Srivastava CM and **Chhabra A***. Application of Magnetic Nanomaterials as Biosensors, 2020, Book Chapter in book entitled “Handbook on Modern Miniaturization Technologies & Devices: An Era of Nano”, CRC Press, Taylor & Francis Group.
2. Vats M*, Sharma G, Sharma V and **Chhabra A***. Metal-Based Nanomaterials: A New Arena for Catalysis, 2020, Book Chapter in Book titled “Functionalized Nanomaterials for Catalytic Application: Trend & Development”, Wiley-Scrivener Publishers.

(iii). Patents Filed:

S. No.	Title	Inventors	Application No.	Date of Filing
1.	An infectious agent/ cells/ biomarker trap system utilizing patient-derived human convalescent plasma to develop next generation diagnostic kits against infectious diseases and chronic conditions (<u>Provisional Indian Patent</u>).	Dr. Arvind Chhabra, AUH.	202011019784	11-05-2020
2.	An Affordable Biodegradable Face-Mask with Anti-Microbial Properties (<u>Provisional Indian Patent</u>).	Dr. Arvind Chhabra, Dr. Monika Vats, AUH, and Dr. Shatendra Sharma, JNU.	202011017740	25-04-2020
3.	Fabric with self-cleaning properties (<u>Indian Patent Application</u>).	Dr. Monika Vats, Dr. Chandra Mohan Srivastava, Dr. Jyotsna Sharma (All	201911014025	08-04-2019



		AUH), Shatendra K. Sharma (JNU), Dr. Arvind Chhabra, AUH.		
4.	A Method of Green Synthesis of Copper Oxide Nanoparticles using Cucumis Sativus (cucumber) Extract and Its Infusion in Cream (<u>Indian Patent Application</u>).	Dr. Arvind Chhabra, Dr. Monika Vats, Dr. Satish Sardana, AUH.	201811045280	11-09-2019
5.	A System and Method for Preparing Chloroplast Nanoparticles (<u>Indian Patent Application</u>).	Dr. Arvind Chhabra, Dr. AK Raghav, Dr. Atul Thakur, Dr. Sudeep Shukla, Dr. Preetam Babu Sharma, Dr. Monika Vats, Dr. Jyotsna Sharma, AUH.	201911016187	18-04-2019
6.	Development of an indigenous apoptosis detection and measurement kit (<u>Provisional Indian Patent</u>).	Dr. Arvind Chhabra, Dr. Sudeep Shukla, AUH.	201811042799	18-04-2019
7.	A System and Method for Ulvan Reduced Gold Nanoparticles (<u>Indian Patent Application</u>).	Dr. Saurabh Bhatia, Dr. Satish Sardana, Dr. Arvind Chhabra, AUH, Dr. Celia Vargas (Department of Pharmacy and Biochemistry, Centro Latinoamericano de Enseñanza e Investigación en Bacteriología 5Alimentaria, National San Marcos University, Lima Peru)	201911010646	19-04-2019
8.	A System and Method for Prediction of the Quality of Effector Function Generation in Human T Cell	Dr. Arvind Chhabra, Dr. Naresh M Chadha, Dr. Burra VLS Prasad, AUH	201911010649	19-04-2019



	Receptor Engineered Anti-Tumor T Cells (<u>Indian Patent Application</u>).			
9.	One pot green synthesis of ulvan reduced andrographolides loaded silver nanoparticles and its antifungal potential (<u>Indian Patent Application</u>).	Dr. Saurabh Bhatia, Dr. Satish Sardana, Dr. Krishna Ram Senwar, Dr. Arvind Chhabra, AUH, Ajay Sharma, AUMP, Gwalior.	201911002754	23-01-2019
10.	Biodegradable, eco-friendly and non-toxic dye for cosmetic and non-cosmetic applications (<u>Indian Patent Application</u>).	Dr. Atul Thakur, Dr. Preeti Thakur, Dr. Arvind Chhabra, AUH	201811045280	30-11-2018
11.	Biodegradable tape for therapeutic purposes as well as other commercial applications (<u>Indian Patent Application</u>).	Dr. Arvind Chhabra, Dr. Atul Thakur, Dr. Satish Sardana, Dr. Monika Vats, AUH.	201811042799	14-11-2018

(iv). Awards and Honors:

(a). Faculty:

Dr. Arvind Chhabra:

Editorial Services for Peer-Review Journals:

1. *Overseas Fellow, Royal Society of Medicine (FRSM), London, UK: 2017-Present.*
2. *Associate Editor-in-Chief - Onco-Targets and Therapy Journal.*
3. *Executive Editor- Journal of Medical Advancements in Genetic Engineering.*
4. *Editorial Board Member- Scientific Reports Journal.*
5. *Editorial Board Member- Stem Cell Discovery Journal.*
6. *Editorial Board Member-Endocrine-Metabolic and Immune Disorders-Drug Targets (EMID-DT).*
7. *Editorial Board Member- World Journal of Experimental Medicine (WJM).*
8. *Editorial Board Member- World Journal of Immunology (WJI).*
9. *Editorial Board Member- ISRN Preventive Medicine Journal.*
10. *Reviewer- Journal of Immunology; Frontiers in Oncology; Vaccine; Journal of Leukocyte Biology; Expert Opinion of Biological Therapy; Expert Opinion Therapeutic Targets; Stem Cell Discovery Journal; Stem Cells and Cloning: Advances and Applications; Future Medicine; Cancer Management and Research; Onco-Targets and Therapy; Journal of Gene Medicine; Endocrine-Metabolic and Immune Disorders-Drug Targets (EMID-DT), Current Pharmaceutical Design (CPD).*



Dr. Manoj Kashyap:

1. Associate Editor: *BMC Cancer*
2. Guest Associate Editor: *Bioinformatics and Computational Biology special issue for Frontiers in Genetics, Frontiers in Plant Science, and Frontiers in Bioengineering and Biotechnology*

Dr. Suresh Kalangi

1. Review Editor-*Frontiers in Biotechnology and Bio engineering*

Scientific Society Membership:

Dr. Arvind Chhabra:

1. Life Member, Indian Immunology Society (IIS).

Dr. Manoj Kashyap:

1. Life Member, Indian Association for Cancer Research (Membership#LM-1074)

Dr. Suresh Kalangi:

1. Emeritus Member, American Association for Cancer Research (AACR)- (Membership#1030207)

(b). Students:

1. Indo-German Entrepreneurship Heckathon Event, 29th-31st May, 2020: Debjane Das and Kritika Singh, students of MSc MMSCT participated as separate teams in Indo-German Entrepreneurship Heckathon Event, 29th-31st May, 2020. The both were judged winners in their team events.

2. Inaugural Stem Cell Institute Research Poster Competition-2020: ASCI held its inaugural Innovation Day Student Poster Competition on September 25th, 2020, with a theme of “Application of Stem Cells in Human Health”. Students presented their posters on digital platform, demonstrating their poster making skills, scientific understanding of the subject, and ability to defend the presentation in question/answer session.

Judges: The judges for the even included:

1. Dr. Ranjana Srivastava, Founder and Director, Nextec Biosciences, Former Deputy Director and HOD Microbiology, CDRI, Lucknow.
2. Dr. Arvind Chhabra, Director, ASCI, AUH
3. Mr. Ankur Gupta, CRC, AUH



(a). Dr. Shibhashish Giri, Deputy Head of the Department, Applied Stem Cell Biology and Cell Technology Troup at Biomedical and Biotechnological Centre (BBZ), Medical Faculty, University of Leipzig, Germany.

Dr. Giri delivered at talk titled “Adult stem cells vs. iPS induced pluripotent stem cells in preclinical research and clinical setting: Current challenges and future prospects” at ASCI, AUH on October 23rd, 2019.

(b). Prof. (Dr.) Anil Shanker, Professor, Biochemistry, Cancer Biology, Neuroscience and Pharmacology; Coordinator, Cancer Immunology and Immunotherapy, Meharry Medical College School of Medicine; Member, Vanderbilt-Ingram Cancer Center and Vanderbilt Institute for Infection, Immunology and Inflammation, Vanderbilt University.

Dr. Shanker delivered at talk titled “Immunological Basis of Cancer Health Disparities” at ASCI, AUH on January 24th, 2020. Dr. Shanker discussed mechanisms of human immune system functioning, their significance in cancer immunotherapy, and differences between different populations contributing to health disparities. Dr. Shanker and Dr. Chhabra discussed how MMS and ASCI, AUH can build close research collaborative activities.

(c). Prof. (Dr.) Deepak Kumar, Director, Julius L. Chambers Biomedical/Biotechnology Research Institute (BBRI); Professor of Pharmaceutical Sciences, North Carolina Central University, 700 George Street, Durham, NC 27707.

Dr. Kumar delivered at talk titled “Non-coding microRNA modulators of Prostate Cancer” at ASCI, AUH on January 24th, 2020. Dr. Kumar discussed significance of microRNAs in cancer onset and disease progression, and their utility as cancer diagnostic markers, in human prostate cancer. Dr. Kumar and Dr. Chhabra discussed how NCCU and ASCI, AUH can build close research collaborative activities.

(d). Prof. (Dr.) Subhash Chauhan, Chair, Department of Microbiology & Immunology; Director, Institute of Cancer Immunotherapy School of Medicine University of Texas Rio Grande Valley (UTRGV) Edinburg, Texas, 78504.

Dr. Chauhan delivered at talk titled “Effective Strategies to Combat the COVID-19 Pandemics”, via digital platform, at ASCI, AUH on May 25th, 2020. Dr. Chauhan talked about the mechanism of COVID19 pathogenesis, and the cutting-edge technologies he is using to study this process and methods that he working on developing to effective interventions. Dr. Chauhan and Dr. Chhabra discussed how RGVT and ASCI, AUH can build close research collaborative activities.

(e). Prof. (Dr.) Pradeep Visen, Director (R&D), Nutra-V Inc., Canada; Research Coordinator, University of Toronto, Canada; Former Clinical Research Scientist, Risk Factor Modification Centre, St Michael's Hospital; Faculty of Medicine, University of Toronto, Canada.



Dr. Visen delivered at talk titled “Evidence-based Nutraceuticals in the management of diseases”, via digital platform, at ASCI, AUH on June 4th, 2020. Dr. Visen and Dr. Chhabra discussed on building close research collaborative activities.

(e). Dr. Manish Tripathi, Assistant Professor, Department of Immunology & Microbiology, University of Texas Rio Grande Valley, McAllen, Texas, USA.

Dr. Tripathi delivered at talk titled “Long-Noncoding RNAs in Human Health and Disease Development”, via digital platform, at ASCI, AUH on September 25th, 2020. Dr. Tripathi talked about the mechanism of metastasis and role of Long-Noncoding RNAs in Human Cancer Development. Dr. Tripathi also discussed cutting edge technologies he is using to study this process and methods that he working on developing to interfere with cancer development process. Dr. Tripathi and Dr. Chhabra discussed at length, how RGVT and ASCI, AUH can build close research collaborative activities.

(f). Dr. Ranjana Srivastava, Dr. Ranjana Srivastava, Founder & Director, Nextec Lifesciences, Former Deputy Director & HOD, Microbiology, Central Drug Research Institute, Lucknow, UP, India.

Dr. Srivastava delivered at talk titled “Journey from Cutting Edge Science to Entrepreneurship: Key Takeaways”, via digital platform, at ASCI, AUH on September 25th, 2020. Dr. Srivastava talked about her research on Mycobacterium Tuberculosis, development of a probe that was patented and used as diagnostic kit, with the support of DBT-BIRAC. Dr. Srivastava also talked about her journey from scientist at CDRI to founder of NextTec Life Sciences. Dr. Srivastava shared with students first-hand experiences of her journey from a cutting edge scientist to inventor and entrepreneur.

Highlights of Invited Guest Lecture Series:

1. Highlights of Visit of Dr. Shibhasish Giri`s Visit:





2. Highlights of Visit of Dr. Anil Sharma and Dr. Deek Kumar's Visit:



3. Highlights of Dr. Subhash Chauhan's Talk on Digital Platform:

Stem Cell Institute, Kiran Mazumdar-Shaw Center for Affordable Innovations, AUH, & Amity International Society of Natural Products Present

EFFECTIVE STRATEGIES TO COMBAT THE COVID19 PANDEMICS

Dr. Subhash Chauhan
 Professor & Inaugural Chair, Department of Immunology
 Founding Director, Institute for Cancer Immunotherapy
 University of Texas Medical School
 The University of Texas Rio Grande Valley

Webinar Schedule: May, 29th, 5.30-6.30 PM
 Registration Link: <http://tinyurl.com/y7gbgq6c>

Moderator: Dr. Arvind Chhabra, Director, Amity Stem Cell Institute (ASCI), AUH
 Director, Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI), AUH



4. Highlights of Dr. Pradeep Visen's Talk on Digital Platform:

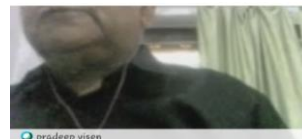
Amity Stem Cell Institute (ASCI), Amity Institute of Pharmacy (AIP), AUH & Amity International Society of Natural Products (AISNP) Present

EVIDENCE-BASED NUTRACEUTICALS IN THE MANAGEMENT OF DISEASES

Dr. Pradeep Visen
 Director (R&D), Nutra-V Inc., Canada
 Research Coordinator, University of Toronto, Canada
 Former Clinical Research Scientist, Risk Factor Modification Centre, St Michael's Hospital
 Faculty of Medicine, University of Toronto, Canada

Webinar Schedule: June 4th, 2020, 11.30am-12.30 pm
 Registration: <http://tinyurl.com/y9gkwh3v>

Moderators: Dr. Arvind Chhabra, Director, Amity Stem Cell Institute (ASCI), AUH
 Dr. Satish Sardana, Director, Amity Institute of Pharmacy (AIP), AUH






5. Highlights of Dr. Ranjana Srivastava and Dr. Manish Tripathi's Talks on Digital Platform:

Amity Stem Cell Institute (ASCI) And Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI) . AUH, Present

LONG-NONCODING RNAs IN HUMAN HEALTH AND DISEASE DEVELOPMENT



Dr. Manish Tripathi
Assistant Professor
Department of Immunology & Microbiology
University of Texas Rio Grande Valley
McAllen, Texas, USA-78504

Webinar Schedule: 25th Sep, 2020, 9.30-10.30 AM
Zoom Meeting ID: 744 8017 2035; Passcode: 71g58d
Registration Link: <https://us04web.zoom.us/j/74480172035?pwd=QkRNandGTUxb5S9sS1ROa1ZZNGx5Z209>
Moderator: Dr. Arvind Chhabra, Director, ASCI, AUH; Director, KMSCAI, AUH

Amity Stem Cell Institute (ASCI) And Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI) . AUH, Present

KEY FROM CUTTING EDGE SCIENCE TO ENTREPRENEURSHIP: KEY TAKEAWAYS



Dr. Ranjana Srivastava
Founder & Director, Nextec Lifesciences
Former Deputy Director & HOD, Microbiology
Central Drug Research Institute, Lucknow, UP, India

Webinar Schedule: 25th Sep, 2020, 10.30-11.30 AM
Zoom Meeting ID: 744 8017 2035; Passcode: 71g58d
Registration Link: <https://us04web.zoom.us/j/74480172035?pwd=QkRNandGTUxb5S9sS1ROa1ZZNGx5Z209>
Moderator: Dr. Arvind Chhabra, Director, ASCI, AUH; Director, KMSCAI, AUH




6. IPR-FDP Talk delivered by Dr. Arvind Chhabra on behalf of AUH Patent Cell:

AUH Patent cell organized FDP on IPR principles and process, with an objective to provide attendees information about different types of Intellectual Properties and Intellectual Property Rights, such as Copyrights, Trademarks and Geographical Indications and Designs. Dr. Arvind Chhabra provided attendees information about different IP types, benefits of filing IP for students and faculty, in their career growth, and also its monetary benefits to them at AUH.

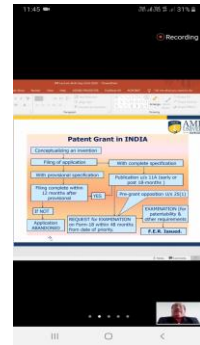
AUH Patent Cell, Amity Stem Cell Institute (ASCI) And Kiran Mazumdar-Shaw Center for Affordable Innovations (KMSCAI) . AUH, Present

INTELLECTUAL PROPERTY AND INTELLECTUAL PROPERTY RIGHTS: BASIC PRINCIPLES AND PROCESSES



Dr. Arvind Chhabra
Professor & Director, Stem Cell Institute
Member, Patent Cell & Coordinator, IPR Activities
Amity University Haryana
Manesar, Gurugram, Haryana, India-122413

Webinar Schedule: 23rd Sep, 2020, 11.00AM-1.00 PM
Zoom Meeting ID: 752 3658 1601; Passcode: NYW4N1
Registration Link: <https://us04web.zoom.us/j/75236581601?pwd=dkpCYklrc1YwT2dkZ1Z1Mj8ZWTQvUT09>



C.



Additional Activities:

(i). Industrial/Center of Excellence Institute Visit

1. National Brain Research Centre (NBRC), Manesar Visit on 27th Jan, 2020

Objectives of the Event:

Visit of AUH students was facilitated by Hon. Pro Vice Chancellor. Four students from the Stem Cell Institute also went with 16 students from other AUH schools for the open house day event at the NBRC, Manesar, Gurugram. The objective of the event was to expose students to research facilities available at NBRC and educate them about career avenues in the field of Molecular Medicine and Stem Cell fields.

Event Highlights:





(ii). NOTABLE CONFERENCES ATTENDED AND INVITED TALKS DELIVERED:

1. Nanoscience Conference-Vigyan Bhawan:

Participated in the 6th World NanoMedicine Conference, held at the Vigyan Bhawan, New Delhi, on January 7-9th, 2019.

Outcome: Discussed potential collaboration possibilities with researchers and scientific leaders, including with Professor Sayed Hasnain, Vice Chancellor, Jamia Milia Islamia University, New Delhi. It could help in collaborative research proposal and student exchange.

Event Highlights: Picture attached below:



2. Patanjali Research Institute visit along with AUH and AUUP delegation:

Dr. Chhabra visited the Patanjali Research Institute, Haridwar, on January 8th, 2019, as part of the AUH and AUUP delegation, upon nomination by Hon. Founder President's Office:

Outcome: Discussed potential collaboration possibilities with researchers and scientific leaders of Patanjali Research Institute, AUUP and also with Dr. Naval, Advisor Government of India. It would help in collaborative research proposal and student exchange.

Event Highlights:





3. JNU invited talk March/April-2019

Dr. Arvind Chhabra delivered an invited talk titled “Transmission Electron Microscopy: A Biologist’s Perspective” in the National Symposium on Principles and Techniques of Electron Microscopy, held at Advanced Instruments Research Facility (AIRF), Jawahar Lal Nehru University (JNU), New Delhi, on March 28-29th, 2019. The conference provided good opportunity to interact with JNU faculty and administrators, and students from different universities. It would help in collaborative research proposal and student exchange.

Event Highlights:



4. JNU invited talk in National Conference on Radiation Physics, November-2019:

Dr. Arvind Chhabra delivered an invited talk titled “Application of Radiation Physics in Development of Cancer Diagnostics and Cancer Therapeutic Approaches” in the *22nd National Symposium on Radiation Physics (NSRP-22) November 8-10, 2019, Jawaharlal Nehru University, New Delhi, India*. In addition, **Dr. Chhabra also Chaired two session in the conference**.

The conference provided good opportunity to interact with participating faculty and students from JNU and other universities/institute, and administrators. It would help in developing collaborative research proposal, and faculty and student exchange.

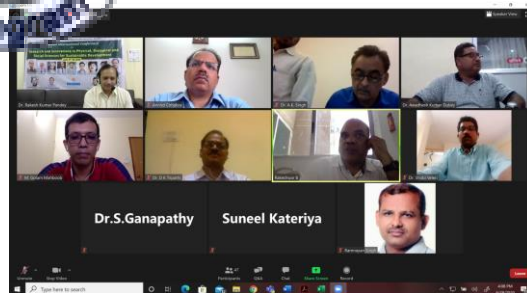
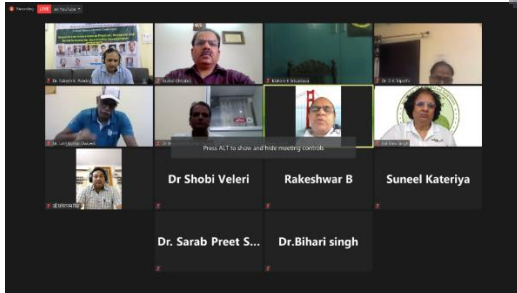
Event Highlights:



5. Invited talk: International Conference on Research and Innovations in Physical, Biological and Social Sciences for Sustainable Development, June 28th, 2020.

Dr. Chhabra delivered invited talk on June 28th, 2020, titled “Application Stem Cell Technology, Cancer Immunotherapy and NanoTechnology in Human Health & Sustainable Development”, in an interdisciplinary international conference on Research and Innovations in Physical, Biological

and Social Sciences for Sustainable Development, via Zoom Online Platform, Organized by Kamla Nehru Institute of Physical & Social Sciences, (Sultanpur) U.P.



GE Healthcare Centre of Excellence
In
Genomics and Proteomics



Amity Institute of Biotechnology
Amity Institute of Integrative Science &
Health
Amity University Haryana
Manesar – Gurgaon
INDIA



GE HEALTHCARE CENTRE OF EXCELLENCE IN GENOMICS AND PROTEOMICS
AMITY UNIVERSITY HARYANA

Program inception: *January 2019*

Head of Centre: *Prof. Rajendra Prasad*

Mission:

The main purpose of the centre is to impart hands on training to the participants with respect to latest advancements in the area of protein expression, purification and characterization which will help them to enhance their existing technical skills under the supervision of qualified GE professionals. This will make students industry ready ensuring greater chances of placement for them. Joint certification from GE HCI & the Amity is aimed at improving the recruitment from potential recruiters.

Objectives of the center:

1. This is first of its kind program aimed at reducing Industry Academia gap and exposing students to latest technology training in basic and advanced protein purification and characterization.
2. Hands on training by qualified GE Professionals to enhance the existing technical skills of the students.
3. To make students industry ready ensuring greater employment opportunities.

Course Plan:

1. Blended training in basic and advanced Protein purification and characterization.
2. Hands-on AKTA Start system and software simulators.
3. Live problem-solving workshops and career readiness sessions.
4. Live digital workshops – facilitated by industry experts across the country to ensure applicability of the learning.
5. Post training support with industry contacts for recruitment.
6. Joint certification by Amity University and GE HCI.

Training details:

Training Methodology: Students trained through Theory & Hands on Training, Instrument Demos & Peer to Peer Learning



Evaluation Methodology: Written tests conducted at the end of each workshop to gauge learning retention

- **Workshop 1: Training on Basic Protein Purification**

Level: Foundational

Conducted by: Lead Specialists, GE Healthcare (Mr. Karan Sharma, Dr. Likhesh Sharma, Dr. Rakesh Arora)

Participants: M.Sc. BT 2nd Semester

No. of Participants :26

Topic Covered: Hands-on-Training on AKTA Start FPLC system using Gel filtration chromatography, SDS Page Analysis

Held on: March 2019

- **Workshop 2: Training on Basic Protein Purification**

Level: Foundational

Conducted by: Lead Specialists, GE Healthcare (Dr. Vaibhav, Dr. Bhargav Prasad & Dr. Jason Raj)

Participants: B.Sc. BT 3rd Semester

No. of Participants: 29

Topic Covered: Hands-on-Training on AKTA Start FPLC system using Gel filtration chromatography & SDS PAGE analysis

Held on: September 2019

- **Workshop 3: Training on Advanced Protein Purification**

Level: Advanced

Conducted by: Lead Specialists, GE Healthcare (Dr. Shiva, Dr. Bhargav and Dr. Vaibhav)

Participants: M.Sc. BT 3rd Semester

No. of Participants: 26

Topic Covered: Biacore Instrument demo, setting up immobilization of ligand in CM5 chip, multicycle kinetics methods using Biacore T200 instrument were performed. Hands on training was given on SDS PAGE analysis and using the Biacore analysis software, multicycle kinetics analysis was performed.



Held on: October 2019

Certification: Joint Certification on successful completion of Basic & Advanced Programs awarded

2020

- **Workshop 4: Training on Basic Protein Purification**

Level: Foundational

Conducted by: Lead Specialists, GE Healthcare (Ms. Gayathri, Dr. Mihir Sahoo & Dr. Vaibhav)

Participants: M.Sc. BT 2nd Semester

No. of Participants :13

Topic Covered: Hands-on-Training on AKTA Start FPLC system using Gel analysis was performed, SDS Page Analysis

Held on: March 2020

- **Fast Track Training Webinars on Downstream Bioprocessing and Bioanalytic Techniques**
conducted by Cytiva, formerly GE Healthcare Life Sciences team comprising of Dr. Sivapathasekaran and Dr. Bhargav Prasad Kodaganti

Participants: 55+ students (UG, PG and Ph.D.), Faculty Participation: 10

Topic Covered: Downstream Bioprocessing and Bioanalytic Techniques

Held on: June 2020

Outcome achieved till date:

- The Centre started functioning from Jan. 2019 and 3 workshops have been organized jointly by GE Healthcare and Amity Institute of Biotechnology, AUH in 2019 in which 81 students had Hands on training on Basic and advanced Protein Purification and Characterization from different GE and SciTal Professionals.
- The SciTal Applied Training was conducted by Dr. Baisakhki Datta as part of the GE training on Protein purification and Characterization. The students learnt to process information, work in teams, communicate their findings and engage in peer learning. Hands-on-Training on AKTA Start FPLC system using Gel filtration chromatography. In the two foundation workshops on basic Protein purification conducted in March and Sept. 2019, hands-on-Training on AKTA Start FPLC system using Gel filtration chromatography was imparted by Mr. Karan Sharma, Dr. Likhesh Sharma, Dr. Vaibhav, Dr. Bhargav Prasad and Dr. Jason Raj, the lead specialists, Wipro GE Healthcare Pvt. Ltd.



- The hands-on training courses covered the theory and practicals of basic aspects of Akta start, Akta pure and Aktaavant systems along with Unicorn software. Hands on training was also given to the students on SDS PAGE analysis – how to setup the method, casting the gel, preparation and loading of samples, running the protein gel electrophoresis, staining and destaining the SDS PAGE gel. At the end of the session, students were evaluated through a written test.
- One 5-days Advanced workshop on Characterization of Proteins was conducted for M.Sc. (BT) students who have earlier undertaken Foundation training in Basic protein purification in Oct.2019 by Dr. Shiva, Dr. Bhargav and Dr. Vaibhav from GE Healthcare. The Practical sessions were conducted which covered Biacore Instrument demo, setting up immobilization of ligand in CM5 chip, multicycle kinetics method protocol creation and setting up of kinetics method using Biacore T200 instrument, running the protein gel electrophoresis, staining and destaining the SDS PAGE gel.
- Prior to these trainings, 2 orientation sessions were held by Dr. Raghavan Ranganathan, GM, South Asia, GE Healthcare who interacted with the students and apprised them about the significance of training programs and how it will make them industry ready.
- The students who completed Basic and advanced trainings were given Joint certification by GE Healthcare and Amity University Haryana.
- In 2020, one orientation session was held on 28th February and hands on training to thirteen students in basic Protein purification for 5 days was imparted by MS Gayathri and Dr. Mihir from GE Healthcare in March.
- Further, Fast-Track training was conducted in webinar mode on "Downstream Bioprocessing and Bioanalytic Techniques" in June 2020 which included participation of approximately 55 students and 10 faculty members. In the downstream bioprocessing session, students were provided with an opportunity to understand the concepts of protein purification and process development via lectures: Introduction to chromatography and Ion Exchange chromatography. Introduction to chromatography, explained the basic chemistry of resin and different types of chromatography techniques integrated with the respective resin availability. Ion Exchange chromatography explained the basics of techniques and in-depth requirement for experimental planning. Webinar in bioanalytics provided a learning experience for students, to understand the concepts of Bioanalytics techniques (SPR principle, assay development) and its various applications. Lecture 1: Kinetic analysis using Biacore systems, explained the theory behind the SPR working principle, different approaches used in kinetics setup and its advantages. Lecture 2: Biacore assay preparations and Applications, explained the assay method development requirements and various applications of Biacore SPR analytical technique covering the industrial and academic research aspects.

Future actionable outcomes:



1. Advanced in-house training has been planned for select students.
2. Placement opportunities for the students in GE healthcare are being explored.
3. Discussions and meetings with the GE and Amity team are currently under process to organize an online workshop for the UG and PG students for the current semester, keeping in view the closure due to COVID.

Glimpses from the workshops:



Orientation sessions with Dr. Raghavan, GM, South Asia, GE Healthcare



Glimpses of Laboratory Sessions with GE Lead Specialists



Glimpses of Theoretical Sessions with GE Lead Specialists & Amity Organizers



Joint certification by GE Healthcare and Amity University Haryana given to Participants



Glimpses from the Fast-Track webinar:



Chromatography is the most common technique for purifying proteins

- Purification of components by chromatography was invented by Mikhail Tsvet in 1903

What is chromatography?

- "Separation of proteins from a mixture by exploiting the inherent protein properties"

Cytiva

V S A DS B BZ US

cytiva

Kinetic analysis using Biacore systems

Bhargav Prasad Kodaganti
June 2020

24:12

Request control

People

Invite someone or dial a number

Currently in this meeting (42)

- SinhiDarta, Uma
- ankita.gaurav
Outside your organization
- anushasinghal19052000
Outside your organization
- anika.mohapatra
Outside your organization
- athulya3598
Outside your organization
- avijaykanchal6.10
Outside your organization
- BABITA ZADWAL
Outside your organization
- bhanwala.ruby
Outside your organization
- bhaanujadav1105
Outside your organization
- Deeksha (Guest)
Guest
- deepak.digari

Kodaganti, Bhargav Prasad

+37 DG AK DA

Dr. Kumar Gaurav Dr. NARENDRA KUM... Dr. Manjiv Anand Kodaganti, Bhargav Prasad

Centre for Data Science



Computational Biology



**Amity Institute of Biotechnology
Amity Institute of Integrative Science & Health
Amity University Haryana
Manesar – Gurgaon
INDIA**



Data Science

Data science is an interdisciplinary field that uses scientific processes and systems to extract insight from data in various forms, either structured, unstructured or semi-structured. While the Committee on Data for Science and Technology (CODATA) defined data science as the interdisciplinary fields and technologies used to conduct scientific research through management and utilization of scientific data. These data sets are being produced at an exponential rate. It is predicted that it will increase to 40 Zettabytes (or 40 billion terabytes) by 2020, 50 times more than in 2010. The cost of acquiring data is expected to decrease dramatically with the help of technology upgrades, such as the development of novel hardware and software for parallel computing, cloud computing etc. This enormous amount of data can be used by the organizations to enable better decision making to generate new insights. There are many research areas such as biology, medical, physics, social media, e commerce, healthcare etc that are totally based on data science. There are two components in data science. First one is the study of the nature of the data and scientific issues related to data itself. The second one is the possible usefulness and real world applications. The broad areas of research are categorized into machine learning and knowledge discovery, business analytics, storage, retrieval and search of data and privacy and security of data.

Market Requirement :

Getting the skilled manpower in this specialized domain is itself very challenging because of the involvement of multi-disciplinary aspect. According to the McKinsey Global Institute, by 2018, the United States alone will lack about 140,000 to 190,000 workers with deep analytical skills and another 1.5 million managers and analysts who can utilize large data sets to make better decisions. According to a report published by Nasscom and Blueocean Market Intelligence, In India, the analytics market is expected to double between 2013 and 2018, reaching a figure of US\$ 2.3 billion by 2018. There will be a shortage of about 200,000 data scientists in India over the next few years according to sources in the Analytics Special Interest Group set up by NASSCOM.

Data Science course at Amity University Haryana:

In order to create the skilled manpower in the area of Data Science, we in Amity University Haryana are offering courses at Post Graduates level courses and also in research through PhD in the domain of Data Science. Our aim is to offer such application oriented course that can bridge the gap between to train manpower and their employability, that fits the requirements in the global market.

Course Highlight :

Data Science Faculties :



We at Amity Institute of Integrative Sciences and Health have talented faculties Dr. Alok Srivastava, Dr. Soumyadeep Nandi, Dr. Ravi Datta Sharma, Dr. Amresh Prakash and Dr. Shakir Bilal, who are participating in this exciting area. Dr. Alok has 15+ years of experience in different domains of data science. In past he has conducted twenty four workshops on Data Science with topic ranging from R programming, data analytics, clustering, modeling, visualization and exploration of graphs. Dr. Soumyadeep has exposure in data integration, high throughput data analysis, parallel computing and distributed computing. Dr. Ravi and Dr. Amresh have good exposure of the domain specific applications in the field of computational biology. Dr. Shakir has background of physics has good exposure in disease modeling.

Curriculum :

Data Science course that we designed is totally application oriented. Participants in this course will get hands on work experience on different subjects of Data Science. We have included the real world example in our curriculum such as Big Data in Biology, Fraud detection, Weather prediction, Risk management, Healthcare informatics, Spam detection, Social media analytics and many more.

Data Science Job role : The participants who will attend this course, can be placed for different job roles such as Data scientist, Data Analyst, Data Architecture, Data Engineer, Statistician, Database Administration and Business Analyst.

Top leading organization with most openings :

AMAZON, CITI, HCL, GOLDMAN SACHS, IBM, JPMORGAN CHASE, ACCENTURE, KPMG, E&Y, CAPGEMINI.

Data Science Job by Industry :

Banking (46 % jobs), Pharma (11%), Energy (11%), Ecommerce (10 %), Media (7 %), Telecom (6 %), Retail (4 %)

Analytics Jobs by Cities :

Banglore (25 %), Delhi & NCR (22 %), Mumbai (17 %)

Education requirement by Analytics jobs :

BE/BTech (42 %), Any post graduate (26 %), MBA/PGDM (10 %), Any graduate (10 %), MTech (7 %)

Analytics Jobs across Tools and Skills

R, Python, Hadoop, Spark, Tableau, Qlik, SSIS, SSRS, SSAS, SSIS, SSRS, SSAS




Median Salary Offered in the country

10.5 Lakh per annum

Project received in Department:

To enhance our research in the domain of data science, we have funding support from different funding bodies that includes Department of Biotechnology, Department of Science and Technology and Indian council of Medical Research. Dr. Alok has six projects, Dr. Ravi has five projects. Dr Soumyadeep Nandi has two projects in the interdisciplinary domain.

Title	Funding agency	Duration	Amount
Computational Systems Biology of Cognitive Dysfunction	Department of Science and Technology, Cognitive Science Research Initiative	3 years	2686500
Identify disease gene association using text mining approach	Department of Biotechnology under Big Data Initiative	3 years	2988200
Identify disease gene association using Google's Tensor Flow	Indian Council of Medical Research	3 years	6627100
A computational software to find biomarkers using alternative splicing as a tool	Department of Biotechnology	2 years	1996063
Identifying the role of P53 regulated long non coding RNAs (LncRNAs) by Crisper/Cas9 in ovarian cancer	Indian Council of Medical Research	3 years	5200000
System level meta analysis of Type 2 Diabetes to identify key regulator.	Indian Council of Medical Research	3 years	5643350
Development of an integrated multi-omics analysis platform, and its application to elucidate the differential process of silk colouration in the Muga silkworm <i>Antheria assamensis</i> Helfer	Department of Biotechnology	3 years	10547992
A Computational Software to find biomarkers using alternative splicing as a tool	Department of Biotechnology	2.5 years	1996063
Alternate splicing in clinical drug resistance in pathogenic <i>Candida</i>	Department of Science and Technology-SERB	3 years	2470000

<p>Developing small molecule inhibitors to target non-genomic androgen signaling and elucidating the role of GPR56 in Prostate Cancer</p>	 <p>Department of Science and Technology-SERJ</p>	<p>3 years</p>	<p>4637570</p>
<p>National level training Programme: In-house two weeks training/FDP programme for faculty/UG/PG/Doctoral students on Blockchain technology</p>	<p>Department of Science and Technology</p>	<p>1 year</p>	<p>900000</p>
<p>Investigating of the role of LncRNA PANDAR in the progression and metastasis of ovarian cancer.</p>	<p>Indian Council of Medical Research</p>	<p>3 year</p>	<p>3000000</p>

Amity Centre of Open Learning and Technologies



Established in 2013, Amity Centre of Open Learning and Education Technology (ACOLET) aim at developing an effective learning environment by bringing greater openness and creativity in the institute. It will be achieved by providing innovative educational strategies using modern Information and Communication Technologies (ICT), providing continuous interactions between students and teachers using electronic means and opening up access to data banks and adequate opportunities for practice.

1.1 Need for ACOLET:

The prime focus of ACOLET is to enhance the teaching learning process in the institute by:

- Providing infrastructural support to the aspirants of ICT implementation in teaching and learning process.
- Helping in professional networking with the resource persons in the respective fields through online activities like participation in FDPs, Blogs, research groups etc.
- Creating awareness about the different knowledge resources across the globe like interactive education software, open access digital libraries, and cheaper and more intuitive technology may facilitate new forms of interaction between students, teachers, education employees and the community and enhance the quality of education by making it more accessible
- Increase the awareness about the use of ICT and its benefits in classroom teaching.
- Ensuring use of ICT in the daily classroom environment through effective pedagogical design. This will help in achieving the high goals in quality of teaching as it makes learning more efficient and is more interesting to learners.

1.2 Summary of Activities undertaken:

In order to achieve the above said goals and effective implementation of ICT, a number of efforts have been undertaken. Some of them include:

1. Hardware/Infrastructural Support:
 - a. Most of the class rooms are equipped with internet, Multimedia Projectors etc. These class rooms are used to share the online lectures, live videos as the part of academic activities. To efficiently implement the open learning in education, various activities have been planned and executed.
 - b. An **Open Learning Area (OLA)** has been developed inside the university premises for the students and faculty members. This is designated space for students' interactions & collaboration. It showcases innovations in educational technology, interactions using digital media, 2D/3D visual experiments, open lectures and more. BYOD (Bring Your Own Device) is adopted to work in the OLA where facilities like wireless access & full internet (protected through university firewall), Charging station, LCD projector are provided
 - c. **Smart Classroom** has been set up (through joint efforts of Amity University and IIT Bombay) with facilities for holding online conferences/webinars/ interactions. The place is used every other day for conducting various events like lectures, seminars and presentation by various guests and faculty members.

- d. Aakash Tabs are provided by students through project Aakash of IIT Bombay. Total 184 tabs have been provided to AUH which are distributed to teachers and students whenever required. Amity is one of the members of **AAKASH project** under which 184 Aakash tablets (at no cost) have been received and is used by the students largely through final year R&D projects. Also, grant of Rs. 1 Lakh, has been received and utilized for setting up an Aakash server and Wi-Fi. Details of Tablets received by Amity University Haryana is:

S. No	Tablet Serial No.	Date of Receipt
1	13181001-13181080	20 May 2013
2.	13181081-13181130	10 June 2013
3.	13181131-13181134	10 July 2013
4.	13181135-13181184	15 Oct 2013
Total No. of Aakash Tab Received=184		

Due to availability of infrastructural support, students participated in various activities held by IIT Bombay. They submitted several Apps to IIT Bombay as was the promising expectation of IIT Bombay from the participating institute.

- Several **classroom management softwares** are tested and implementation (includes lms, moodle, clickers). It has been planned to extend their usage like content sharing, conducting polls, instantaneous quiz, one to one communication between teacher and students (through online discussions and blogs etc.).
- The faculty members are designing the learning material of their respective subjects** to enhance the aptitude and technical skills of our students and further implementation and practicing them through daily quiz and their analysis considering the performance of each student in the quiz. Special attention is paid to slow learners and some higher level learning is offered to brilliant students by designing the level based quiz system. This helps them in their placements and cracking the various entrance exams for higher studies
- In order to build networking, the number of remote centers of renown Indian institutes are set up including IIT Bombay, IIT Kharagpur, NITTR Chandigarh, Indian Institute of Remote Sensing-Indian Space Research Organization (IIRS-ISRO) etc.
- Faculty and students are encouraged to attend **Online Lectures/workshops/FDPs** held time to time for knowledge sharing and discussions with experts in their respective fields throughout the world. Number of online workshops/FDPs has been conducted at the campus as detailed below:

S. No	Name of workshop	Duration	Participating Department/ School	Hosting Institute	Funds Received
1.	ISTE workshop on Database Management System	21May to 31 May 2013 (Two weeks)	38 CSE,IT (ASET)	IIT Bombay	Rs. 1,61,464.00
2.	ISTE workshop on Analog Electronics	4 June -14 June 2013 (Two weeks)	24 ECE (ASET)	IIT Kharagpur	Rs. 1,11,732.00
3.	Session on Clickers Usability in classroom	19 Aug 2013 (10 am-1pm)	All Faculty who will use	IIT Bombay (Through	Nil

			Teacher for classroom teaching (CIVIL (ASET) and Architecture (ASAP))	Aakash Project)	
4.	Green Building Awareness	24 Aug 2015 (Half Day)		IIT Bombay and Academy of Architecture	Rs. 3000.00
5.	Engineering Mechanics	26 Nov - 6 Dec 2013	27 MECH (ASET)	IIT Bombay	Rs. 1,18,040.00
6.	Fluid Mechanics	20 May 2014-30 May 2014	34 MAE (ASET)	IIT Kharagpur	Rs. 1,33,696.00
7.	Computer Programming	16 June 2014-21 June 2014	36 CSE, ECE (ASET)	IIT Bombay	Rs. 98,727.00
8.	Steps2 Research	19 Sept 2014-20 Sept 2014	26 (ECE, CSE (ASET))	Amal Jyoti College of Engineering, Kerela	Nil
9.	Control Systems	2 Dec 2014-12 Dec 2014	39 ECE (ASET)	IIT Kharagpur	Rs. 1,51,655.00
10.	CMOS, Mixed Signal And Radio Frequency VLSI Design	December 26, 2016 - February 4, 2017	18 (ASET)	IIT Kharagpur	Rs. 58,260
11.	Electric Power System	June 12, 2017 - July 15, 2017	16 (ASET ECE)	IIT Kharagpur	Rs. 60,482
12.	Foundation Program in ICT for Education	Aug 3, 2017- Nov 10, 2017	50 (AUH)	IIT Bombay	Rs. 42,000
13.	Pedagogy for Online and Blended Teaching-Learning Process	Sept 14, 2017-Dec 3, 2017	50 (AUH)	IIT Bombay	
14.	Foundation Program in ICT for Education	March 08, 2018 – April 12, 2018	10 (AUH)	IIT Bombay	-
15.	Pedagogy for Online and Blended Teaching-Learning Process	May 03, 2018 - May 31, 2018	10 (AUH)	IIT Bombay	-
16.	Workshop on SCILAB	May 4, 2019	15 (ASET)	IIT Bombay	Rs. 5000
17.	Coordinators Workshop for Python	May 25, 2019	01	IIT Bombay	-
18.	Workshop on Python	June 22, 2019	15 (ASET)	IIT Bombay	Rs. 5000
19.	Cordinators workshop on “Linux Workshop for Teachers “	August 03, 2019	01	IIT Bombay	-
20.	Linux Workshop for	August 23,	Registration	IIT Bombay	Rs. 5000

	Teachers	2019	In process		
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The number of participants from Amity Rajasthan, Amity Gwalior, Amity Bijwasan Campus, GITM Bilaspur, YMCA University of Science & Technology, Faridabad, CBS Group of Institutions, Jhajjar, Shri baba Mastnath Engineering College, Invertis University, World Institute of Technology, Sohna has attended these workshops at Amity University Haryana.

In all the above said workshops, eminent professors from IIT Bombay, IIT Kharagpur, Academy of Architecture India and many other renowned institutes had contributed as teaching faculty. Prof. Anindya Sundar Dhar, Prof. Indrajit Chakraborty, Prof. Achintya Halder, Prof. Pradip Mandal, Prof. Siddhartha Mukhopadhyay, Prof. Tapan K. Ghoshal, from ECE department IIT Kharagpur, Prof. Sankar Kumar Som(SKS), Prof Suman Chakraborty(SC), Prof. Sandipan Ghosh Moulic(SGM) from Mechanical Department IIT Kharagpur, Prof. S. Sudarshan, Prof. D. B. Patak, Dr. Mukta Atrey from CSE Department IIT Bombay has been among the faculty members of the different courses being held at AUH. The detailed description of these events is given in Annexure.

The efforts put in to hold such workshops brought fruitful results for AUH as:

- a. The faculty at AUH enthusiastically participated in the workshops which helped them in **knowledge building and in depth discussion** regarding the subjects with the teacher faculty.
- b. Some of the faculty members are still in constant touch with the teaching as well as participant faculties from across the nation through moodle for the discussion and problem solving. This lead to exposure of faculty members and increased their **participation in conferences and interactions** held time to time. The number of publications in the respective fields increased as well.
- c. The interaction with professors helped in finding new problems that can be taken as **UG and PG projects as well as research objectives by PhD students**.
- d. The introduction to various open source software of Engineering was through one of such interaction only. Now, ASET do have one **open source lab** implementing Scilab to cope up the issue of multiple user requirement of MATLAB.
- e. The participation in other projects like **project Aakash, project Eklavya, blended MOOCs** was an outcome of motivation by the hosting institutes especially IIT Bombay.

6. Students are encouraged to use the various **e-learning tools** (apps, MOOCs, adaptive learning solutions). We prefer platform agnostic, web-based solutions.

7. Since past four years university is participating in **blended MOOC programs**, where the two different modes of delivery has been adopted: online and face-to face interaction. For the courses selected to be run in blended mode, faculty of AUH covers the major topics of the course and is responsible foundation building of the course while faculty of IIT Bombay interacts online with the students for discussion and problem solving, regularly give assignments and tutorials for practice. The students are evaluated jointly by faculty of AUH and IIT Bombay at the end of semester. Till date following courses are offered by the university in blended mode

S. No	Name of course	Duration	Year
1.	Signals and system (EE210X)	One semester	30 July 2015
2.	Introduction to computer programming(BMWC 101.1X)	One semester	21 July 2015
3.	Technical Communication (HS791x)	One Semester	6 Feb 2016
4.	Signals and System (EE210xA16)	One semester	26 July 2016
5.	Technical Skills	One month	20 Feb 2018 to 19 Mar 2018
6.	Soft Skills	One Month	04Sept.-07Oct.2017
7.	Workplace Communication	One Month	06Oct.-12Nov2017
8.	Financial Literacy	One month	January 23rd, 2018 to February 18th, 2018

In addition to this, university has participated in online courses through SWAYAM portal. The online content of these courses were shared among the students in addition to the lectures delivered in regular classroom teaching and regular discussions were held by class teachers in tutorials and assignments.

S. No	Name of Course	Start Date	UG/PG	School
1.	Introduction to Strategic Management	01 May 2018	UG	ABS
2.	Strategy and the Sustainable Enterprise.	01 May 2018	UG	ABS
3.	Organizational Design: Creating Competitive Advantage	01 May 2018	UG	ABS
4.	Environment Natural resources and Sustainable Development	01 May 2018	UG	ASEES
5.	Computer Programming/ Problem solving through Programming In C	09-01-2018, 22 Jan	UG, PG	ASET
6.	Antennas	22-Jan	UG	ASET
7.	Synthesis of Digital Systems	22-Jan	UG	ASET
8.	Manufacturing Process Technology I & II	22-Jan	UG	ASET
9.	Business Analytics For Management Decision	22-Jan	PG	ABS
10.	Basic Electrical Circuits	30/Jul/18	UG	ASET
11.	Fundamentals of Electrical Engineering	30/Jul/18	UG	ASET
12.	Digital Image Processing	30/Jul/18	UG	ASET
13.	Software Engineering	30/Jul/18	UG	ASET

14.	Introduction to Programm	30/Jul/18	UG	ASET
15.	Engineering Thermodynamics	30/Jul/18	UG	ASET
16.	Strength of Materials	30/Jul/18	UG	ASET
17.	Engineering Metrology	30/Jul/18	UG	ASET
18.	Concrete Technology	30/Jul/18	UG	ASET
19.	Control engineering	30/Jul/18	UG	ASET
20.	Control systems	30/Jul/18	UG	ASET
21.	Wastewater Treatment and Recycling	30/Jul/18	UG	ASET
22.	Heat Transfer	30/Jul/18	UG	ASET
23.	Computational Fluid Mechanics	30/Jul/18	UG	ASET
24.	Information Theory, Coding and Cryptography	30/Jul/18	UG	ASET

This has helped AUH in:

- a. Providing **overall exposure to students as well as teaching faculty** of the specific courses.
- b. The brainstorming required while solving the numerical problems, questionnaire and assignments added another feather to the cap.
- c. Also, **new pedagogies** that may help to make the course delivery more efficient were learned and successfully implemented.
- d. Also, the students are motivated to participate in different competitions and trainings held time to time organized by different prestigious institutes of India. One such example is **Project Eklavya** through which our students always demonstrated excellent performance and are selected each year for a semester long training at IIT Bombay.

ANNEXURE

TWO WEEKS WORKSHOP ON DATABASE MANAGEMENT SYSTEM



Amity University Haryana, Manesar organized two weeks workshop on Database Management System from May 21-31, 2013 through ICT in collaborations with Indian Institute of Technology, Bombay and Indian Society for Technical Education. The workshop was fully funded by MHRD through project National Mission on Education.

Objective: The major objective of the workshop is to introduce following concepts to the participants:

1. Overview of data management systems. Relational model and query languages (relational algebra and calculus, SQL). Database design using the ER Model, ER Diagrams, UML Class Diagrams. Relational database design and normalization. Integrity and Security. Design and development of Web based information systems.
2. Overview of storage structures, indexing, query processing and optimization, and transaction processing.
3. A brief introduction to decision support and data analysis, data warehousing and data mining and Information Retrieval.
4. Querying Big Data using Hadoop.

Teaching Faculty: The lectures were delivered by Prof. S. Sudarshan, Department of Computer Science, IIT Bombay.

Participation: Total number of participants 34 (It includes 25 in-house participants and 9 outstation participants).

Funds: The funds of **Rs. 1, 61,464** were received from IIT Bombay to organize this event.

The Workshop offered a good platform for the knowledge sharing and interaction between the eminent professors of IIT Bombay and participants across the country. The knowledge shared will not only help in building effective classroom environment, but also assist the persons who wish to pursue research in Database field.



Figure 1: Prof. S. Sudarshan, Head of Department of Computer Science &Engineering, IIT Bombay addressing the faculty of AUH though AVIEW interaction



Figure 2: Participants during the workshop



Figure 3: Pro-Vice Chancellor Dr. Padmakali Banerjee addressing the participants of the workshop



Figure 4: Group Photograph, participants of DBMS workshop

TWO WEEKS WORKSHOP ON ANALOG ELECTRONICS

(JUNE 4-14, 2015)

Amity University Haryana, Manesar organized this two weeks workshop through ICT in collaborations with Indian Institute of Technology Kharagpur and Indian Society for Technical Education. The workshop was fully funded by National Mission on Education (project of MHRD, Government of India)

Objectives:

The scope of the workshop includes Semiconductor Devices (BJT and MOSFET), single stage and multistage amplifiers, current mirror, differential amplifier, feedback and stability analysis, oscillators and power amplifiers. To enhance the reach of faculty live interaction with faculty attending the conference and teachers at IITs was done through a virtual classroom environment, using AVIEW on internet. Here, Lectures were delivered on the subject of Analog Electronics by faculty of IIT Kharagpur, while tutorials and labs were conducted locally at AUH.

Teaching Faculty:

- Prof. Anindya Sundar Dhar, Department of Electronics & Electrical Communication Engineering, IIT Kharagpur.
- Prof. Pradip Mandal, Department of Electronics & Electrical Communication Engineering, IIT Kharagpur.
- Prof. Indrajit Chakrabarti, Department of Electronics & Electrical Communication Engineering, IIT Kharagpur.

Participation: Total number of participants attended the workshop were: **21**(including 3 outstation participants).

Funds Involved: Total expenditure of the workshop was **Rs. 1, 11,732** and was provided by IIT Kharagpur



Figure 5: Inauguration session being organized at IIT Kharagpur



Figure 6: Prof. D.B. Phatak addressing the audience through AVIEW



Figure 7: Lectures being transmitted through AVIEW

The overall response of the participants of workshop was very good. The practical sessions and the assignment problems were highly appreciated by the participants owing to their nature of complexity, practical implementation and brainstorming involved.

ONE DAY WORKSHOP ON CLICKER USABILITY IN CLASSROOM



One day workshop on Clicker Usability in Classroom was organized in association with Indian Institute of Technology (IIT), Bombay on 19th August 2013.

Objective: The objective of the workshop was to:

- a) Help the Remote Centers in setting up the Clicker Software on Aakash Tablets
- b) Develop the moodle and Aakash server at the remote center for implementation in effective classroom teaching.

Teaching Faculty: Prof. Deepak B. Pathak, Dept of CSE, IITB, Mumbai and Clicker development team, IIT Bombay

Participation: The course was attended by Technical team of remote center of IIT Bombay

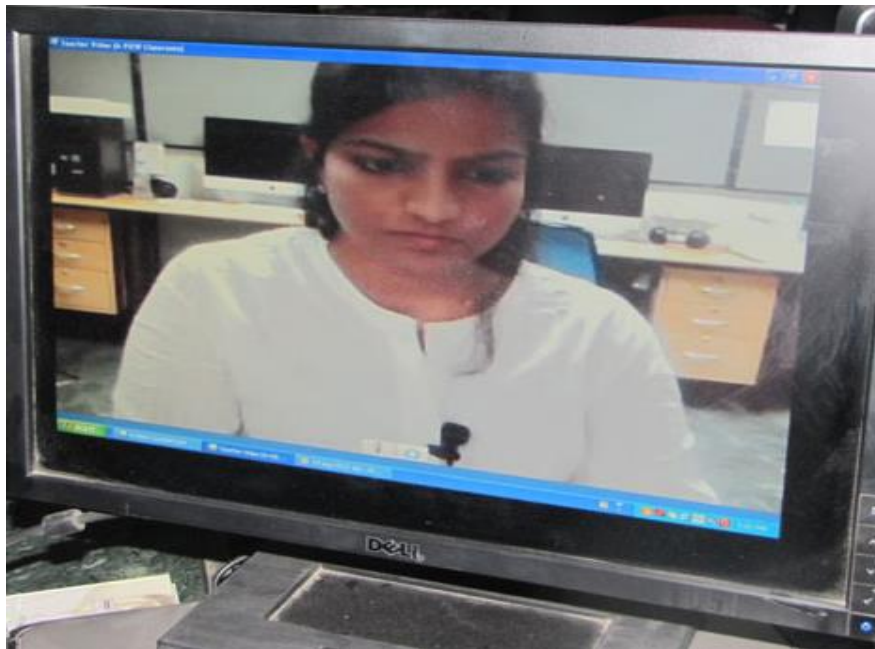


Figure 8: Faculty delivering the lecture live from IIT Bombay



Figure 9: Participants of workshop on Clickers

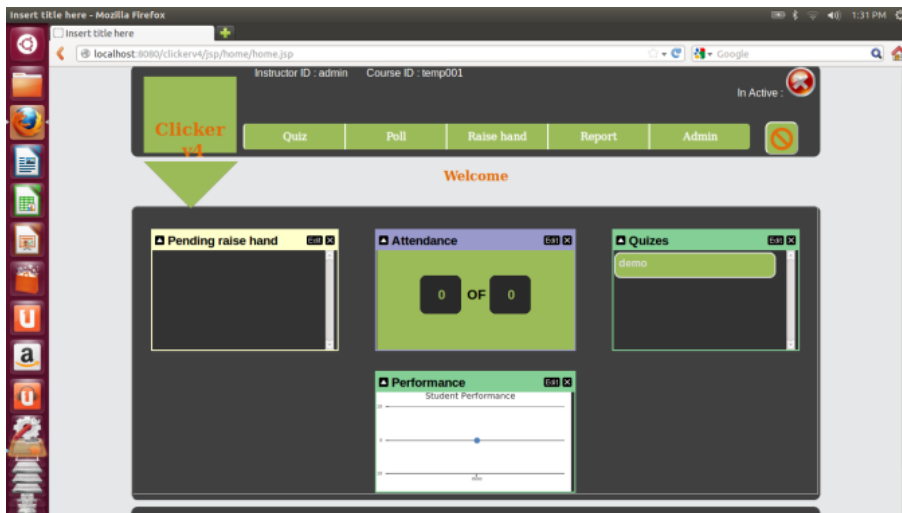


Figure 10: Screen shot of Clicker being implemented



Figure 11: Screenshot of clicker account of a faculty member

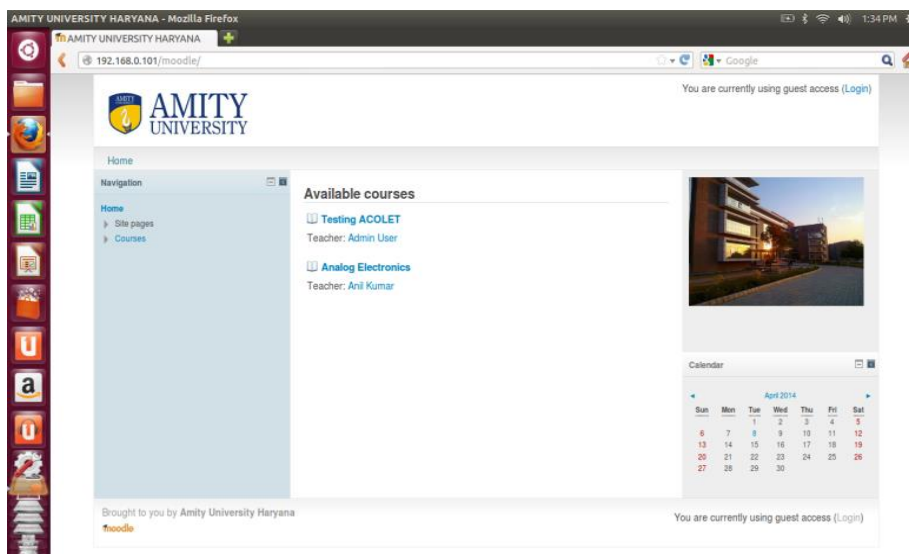


Figure 12: Moodle Account being created

The workshop was conducted through A-View Classroom. The importance of Aakash in upgrading the classroom teaching through Clicker was stressed upon and the benefits of using the Aakash2 Tablets for effective and efficient teaching were demonstrated. The team guided the participants about the Clicker Software Installation on an Ubuntu desktop serving as a server enabling interaction between the students and the instructor through Aakash Tablets. Through this workshop the participants came across an elaborative demonstration of setting up the admin-control on the clicker software. The workshop was highly useful as the attendees learnt how various quizzes can be efficiently managed through the Clicker software. Besides this, they were also made familiar with maintenance of the records through this software.

ONE DAY WORKSHOP ON GREEN BUILDING AWARENESS



Objective: One Day workshop on Green Building awareness was organized at AUH on 24 August, 2013 in order to promulgate awareness on sustainable construction. The aim of the workshop is to give a broad overview to Engineering and Architecture students across the country about the various facets of sustainable buildings. The event was organized by AUH in association with IIT Bombay and Rachana Sansad's Academy of Architecture (AoA). The participants attend at a remote center where the lecture transmission and live interaction took place through distance mode using the AVIEW technology and the internet

Teaching Faculty:

Prof. Monika Jain, IIT Bombay

Prof. Jiten Prajapati, Academy of Architecture

Prof. Jayant K Nayak, IIT Bombay

Prof. Swati Chokshi, Academy of Architecture

Prof. Rangan Banerjee, IIT Bombay

Special Lecture: Students of Team Shunya, Academy of Architecture and IIT Bombay

Participation: Total 34 persons have participated in this workshop.

Funds: Total expenditure of the workshop was Rs. 3000 and was provided by IIT Kharagpur

The workshop successfully created awareness about sustainable buildings. The brief overview was given on overview of the relationship between building sector and energy sector through energy production and consumption and the role of building sector in India, Green building rating systems Context Sensitive Approach to Sustainable Building Design, Thermal Performance of Building concept of sustainability in building design and various renewable energy options for Buildings. A team of students from IIT Bombay and Rachana Sansad's Academy of Architecture (AoA), named Team Shunya, also interacted about designing a building with a net zero energy house for the Indian middle class to address the housing and energy needs of the country's growing urban population.



Figure 13: Glimpse of interactive session during the workshop



Figure 14: Prof. Swati Chokshi, Academy of Architecture, during one of the sessions



Figure 15: Panel for discussion at IIT Bombay during in teractive session

TWO WEEKS WORKSHOP ON ENGINEERING MECHANICS

(Nov 26- Dec 6, 2013)

The two week workshop on Engineering Mechanics conducted by IIT Bombay, sponsored by Ministry of Human Resource Development, Govt. of India, under the National Mission on Education through Information and Communication Technology (NMEICT) was held at Amity University Haryana (RC 1318) from 26th Nov.- 6th Dec., 2013

Objective: This workshop aimed at enhancing the teaching skills of faculty in mechanical and civil Engineering. The content discussed during the workshop includes Fundamentals Concepts, Principles Vector Mechanics, Equivalent System of Forces, Equilibrium of Rigid bodies, Analysis of Structures, Friction, Energy Methods, Dynamics and Vibrations. The workshop was highly beneficial for faculty teaching Engineering Mechanics or Solid Mechanics or Structural Mechanics at the UG level.

Participation: Total 28 faculty members (20 members from AUH & 08 from outside institutions) from mechanical, civil & aerospace engineering departments attended the workshop.

Teaching Faculty:

Prof. Mandar M. Inamdar (Department of Civil Engineering, IIT Bombay)
Prof. Sauvik Banerjee (Department of Civil Engineering, IIT Bombay)

Funds: Total expenditure of the workshop was Rs. 1, 18,040 and was provided by IIT Bombay

The lectures and complex tutorial problems discussed during the workshop were very informative and all the participants enhance their concepts of engineering mechanics during the workshop. All the participants appreciated the teaching methodology & problem solving approach used by Prof. Inamdar & Prof. Banerjee. All over the workshop was a great success to its objective.



Figure 16: Prof. Dr. Padmakali Banerjee addressing the participants during the inauguration session



Figure 17: Dr. Aseem Chauhan, Chancellor, AUH, interacting with the team during his visit to the event



Figure 18: Dr. Aseem Chauhan, Chancellor, AUH, interacting with the participants during his visit to the event



Figure 19: Dr. Aseem Chauhan, Chancellor, AUH, during his visit to the event



Figure 20: Organising Team



Figure 21: Prof. S.K. Dubey, Dean Engineering and Science, Amity University Haryana, addressing the participants



Figure 22: Participants Attempting the quiz on moodle



Figure 23: Participants Attempting the quiz on moodle



Figure 24: Participants Attempting the quiz on moodle



Figure 25: Group Photograph of the participants

TWO WEEKS WORKSHOP ON FLUID MECHANICS

(May 20 - 30 May 2014)

Amity University Haryana, Manesar organized two weeks workshop on Fluid Mechanics on May 20-30, 2014 through ICT in collaboration with Indian Institute of Technology, Kharagpur and Indian Society for Technical Education. The workshop was fully funded by National Mission on Education (project of MHRD, Government of India)

Objectives:

To enhance the reach of faculty for training programs offered by IITs through QIP (Quality Improvement Programme) and ISTE (Indian Society of Technical Education), a distance education program is launched by IIT Kharagpur according to which live interaction with faculty attending the conference and teachers at IITs is permitted through a virtual classroom environment, using AVIEW on internet. Here, Lectures were delivered on the subject of **Fluid Mechanics** by eminent faculty of IIT Kharagpur, while tutorials were conducted locally at AUH.

Teaching Faculty:

- Prof. Sankar Kumar Som, Department of Mechanical Engineering, IIT Kharagpur.
- Prof. Suman Chakraborty, Department of Mechanical Engineering, IIT Kharagpur.
- Prof. Sandipan Ghosh Moulic, Department of Mechanical Engineering, IIT Kharagpur.

Participation:

33 number of participants attended the workshop including participation from Amity University Bijwasan, Amity University Jaipur, GITM, Bilaspur and CBS Group of Institution, Jhajjar

Funds Received :

The fund of **Rs. 1,33,696** is provided by IIT Kharagpur to organize the event.

Moodle platform was used by IIT Kharagpur for conducting quiz, tutorial sessions, feedback and Discussion. Discussion forum of the workshop is the active platform where not only the participant faculty, but the Professors of IIT actively post the blogs and answers to the questions posted by the various end users. The contents of the workshop and the teaching methodology were highly appreciated by the participants. All over the workshop was a great success to its objective.



Figure 26: Participants during the event



Figure 27: Online lecture during the event

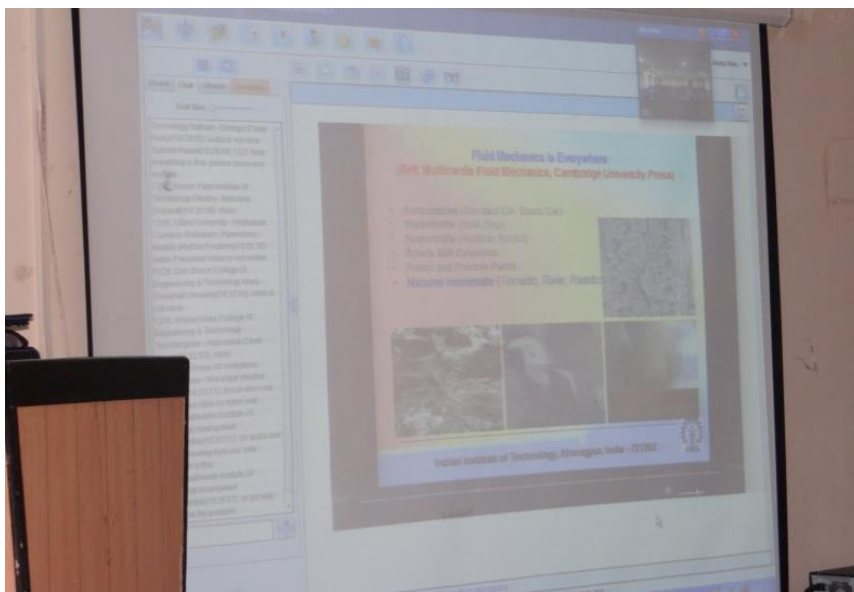


Figure 28: Lecture being transmitted from IIT Kharagpur



Figure 29: Valedictory session



Figure 30: Prof. AK Johri addressing the participants during the valedictory session



Figure 31: Prof. Dr. Padmakali Banerjee, Pro-Vice Chancellor, AUH, addressing the participants



Figure 32: Prof. Dr. R.C. Sharma , Vice Chancellor, AUH, addressing the participants



Figure 33: Valedictory session



Figure 34: Dr. Karamjit Kaur addressing the participants during the valedictory session



Figure 35: Organizing Team



Figure 36: Group Photograph of participants

TWO WEEKS WORKSHOP ON COMPUTER PROGRAMMING

(June 16-June 21, 2014)

Amity University Haryana organized the two week ISTE Workshop on “Computer Programming” conducted by IIT Bombay under National Council for Educational Research and Training (MHRD, Govt. of India) from June 16-21, 2014.

Objective: The objective of this workshop was to impart knowledge of Computer Programming on a larger scale and at a faster rate; to make the relevant study material/Video/Presentations available to all at no cost; to help the students, teachers and working professionals learn Data Base Concepts and implement them in real life etc.

Teaching Faculty:

- Prof. Deepak B. Phatak, Department of Computer Science and Engineering, IIT Bombay
- Prof. Sridhar Iyer, Department of Computer Science and Engineering, IIT Bombay

Participation: The workshop was attended by 51 participants (40 in-house participants and 11 outstation participants)

Funds: The fund of Rs. 98,727 was provided by IIT Bombay to successfully conduct the event.

The lectures were transmitted live, and were received at more than 270 remote centers across the country through synchronous distance mode, along with the interaction of participants. The workshop was very beneficial to all the faculty members teaching Computer Programming in the college. It provided new teaching methodology using Array, MOOCs, Simple CPP and Code blocks etc. Various theoretical concepts on Computer Programming were discussed with a practical approach focusing on their real world implications rather than just theory. The participants got the opportunity to interact with the teaching fraternity at various engineering colleges across the country.



Figure 37: Participants during the workshop



Figure 38: Live lectures being transmitted from IIT Bombay



Figure 39: Interaction session



Figure 40: Participants during the valedictory session



Figure 41: Dr. Praveen Kumar, HOD CSE, addressing the participants during the valedictory session



Figure 42: Dr. Padmakali Banerjee, Pro-Vice Chancellor, Amity University Haryana, addressing the participants during the valedictory session



Figure 43: Dr. Padmakali Banerjee, Pro-Vice Chancellor, Amity University Haryana, addressing the participants during the valedictory session



Figure 44: Dr. RC Sharma, Vice Chancellor, Amity University Haryana, addressing the participants during the valedictory session



Figure 45: Certificate of participation distribution



Figure 46: Certificate of participation distribution



Figure 47: Group Photograph



Figure 48: Organizing team

TWO DAY WORKSHOP STEPS 2 RESEARCH

(19 Sep 2014-20 Sep 2014)

Amity University Haryana in association with Amal Jyothi College of Engineering Kerala and ISTE conducted a two day national level e-Workshop on “**STEPS 2 RESEARCH**”

Objective: The focus of workshop was on understanding research in multiple perspectives and to help researchers to acquaint themselves with recent developments.

Resource Persons: Dr. D. B Phatak, IIT, Bombay
Dr. Jose Kannampuzha, Amal Jyothi College of Engineering
Dr. Kannan Moudgalya, IIT Bombay
Dr. Achyut Sankar S. Nair, Centre for Bio Informatics, Trivandrum
Dr. Sahana Murthy, CDEEP, IIT Bombay
Dr. K. Alexander, Principal, S.D. College Kanjirappally
Dr. Soney C. George, Centre for Nano-Science & Technology, AJCE

Participation: The event was attended by 26 UG/PG students.

The seminar offered a unique opportunity to learn from very eminent academicians and research scientists by sharing their experiences and best practices blended with theoretical and experimental research. It also provided an excellent opportunity in equipping and enhancing students capabilities in the pursuit of their research programme, spanning from identification of the topic to documentation of the Thesis and related scholarly publications.

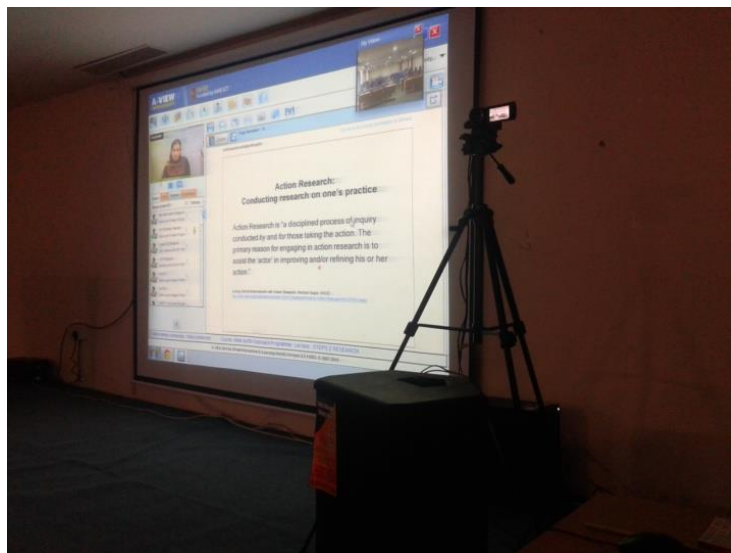


Figure 49: Online lecture being transmitted from Amal Jyothi College of Engineering



Figure 50: Participants during the workshop

TWO WEEKS WORKSHOP ON CONTROL SYSTEMS

(Dec 2- Dec 12, 2014)

Amity University Haryana, Manesar organized two weeks workshop on Control System through ICT in collaborations with Indian Institute of Technology, Kharagpur and Indian Society for Technical Education. The workshop was fully funded by MHRD through project National Mission on Education.

Objectives:

1. The workshop focus on the field of control system, where the Basic Concepts of control system, Closed and open loop control, Servo and supervisory control, time and frequency domain I/O modeling, system Analysis based on stability and Control system design were discussed.
2. The workshop address issues related to teaching of Control System course at the undergraduate level, viz. Model syllabus, Lesson planning, Learning resources such as examples, simulations, videos, etc., Tests and Experiments
3. To enhance the reach of faculty for training programs offered by IITs through QIP (Quality Improvement Programme) and ISTE (Indian Society of Technical Education), a distance education program is launched by IIT Kharagpur according to which live interaction with faculty attending the conference and teachers at IITs is permitted through a virtual classroom environment, using AVIEW on internet.

Teaching Faculty:

- Prof Siddhartha Mukhopadhyay, Department of Electrical Engineering, IIT Kharagpur.
- Prof Tapan Kumar Ghoshal, Department of Electrical Engineering, Jadavpur University Kolkata

Participation:

Total number of participants attended the workshop were: **40** (including 3 outstation participants).

Expenditure/Fund Utilisation:

Total expenditure of the workshop was **Rs. 1, 51,655** and was funded by IIT Kharagpur

The Workshop offered a good platform for the knowledge sharing and interaction between the eminent professors of IIT Kharagpur and participants across the country. The knowledge shared will not only help in building effective classroom environment, but also assist the persons who wish to pursue research in Control System Engineering. The overall response of participants was overwhelming and as per feedback of candidates, they would like to attend such workshops in future also. The real life examples given by Prof TK Ghoshal were highly appreciated.



Figure 51: Participants during the workshop



Figure 52: Live lectures being transmitted from IIT Kharagpur



Figure 53: Participants during the workshop



Figure 54: Dr. PB Sharma, Vice Chancellor, AUH interacting live with the professors at IIT Kharagpur



Figure 55: Live lectures being transmitted from IIT Kharagpur



Figure 56: Live lectures being transmitted from IIT Kharagpur



Figure 57: Dr. Karamjit Kaur addressing the participants during the Valedictory Session



Figure 58: Valedictory session



Figure 59: Valedictory session



Figure 60: Group Photograph of participants of Control System workshop

TWO WEEKS WORKSHOP ON MIXED SIGNAL AND RADIO FREQUENCY VLSI DESIGN

(Dec 26 2016-Feb 4, 2017)



Amity University Haryana, Gurgaon organized this workshop through ICT in collaborations with Indian Institute of Technology, Kharagpur and Indian Society for Technical Education. The workshop was fully funded by MHRD through project National Mission on Education Two-week (December 26, 2016 - February 4, 2017 - Online activity equivalent to one week from 26th December 2016 to 4th February 2017 and Physical participation at Remote Center from 30th January to 4th February).

Objective of the Workshop

1. Knowledge building on CMOS, Mixed Signal and Radio Frequency VLSI Design
2. Organize the workshop through AVIEW to enhance the reach of faculty for training programs organized by IITs.
3. Open discussion on practical aspects of the subject.

Participation: 18 faculty members from AUH participated in the event.

Faculty:

1. Prof. Indrajit Chakrabarti, IIT Kharagpur
2. Prof. T. K. Bhattacharya, IIT Kharagpur
3. Dr. Mrigank Sharad , IIT Kharagpur

Funds Received : The fund of **Rs. . 58,260** is provided by IIT Kharagpur to organize the event.

The Workshop offered a good platform for the knowledge sharing and interaction between the eminent professors of IIT Kharagpur and participants across the country. The knowledge shared was very helpful to the persons who wish to pursue research in CMOS Mixed Signal and RFIC Design. The overall response of participants was overwhelming and as per feedback of candidates, they would like to attend such workshops in future also.



Figure 61: Participants attending the live online session



Figure 62: Live Lecture being transmitted from IIT Kharagpur



Figure 63: Group photograph of participants

TWO WEEKS WORKSHOP ON ELECTRIC POWER SYSTEM

(July 12-July 15, 2017)

Amity University Gurgaon Haryana, organized this workshop through ICT in collaborations with Indian Institute of Technology, Kharagpur and Indian Society for Technical Education. The workshop was fully funded by MHRD through project National Mission on Education.

Objective of the Workshop

As per the objectives laid out, the participants pursuing this course should be able to :

1. Identify as to what Comprises a Power System
2. Realize the need for Renewable Energy Sources for Electric Power Supply.
3. Become aware of usefulness of ICT in reliable operation of Electric Power System.
4. Be able to carry out all essential analyses necessary to have reliable operation of Electric Power System.

Teaching Faculty:

1. Prof. N K Kishore IIT Kharagpur,
2. Prof. Shreevardhan A Soman, IIT Bombay
3. Prof Gautam Bandyopadhyay IIT Kharagpur

Participation: 16 no. of Faculty Members participated in the workshop.

Funds: The fund of **Rs. 60,482** is provided by IIT Kharagpur to organize the event.

The Workshop offered a good platform for the knowledge sharing and interaction between the eminent professors of IIT Kharagpur and participants across the country. The knowledge shared was very helpful to the persons who wish to pursue research in Electric Power System. The overall response of participants was overwhelming and as per feedback of candidates, they would like to attend such workshops in future also.



Figure 64: Panel of IIT Kharagpur Faculties



Figure 65: Amity University Haryana Participants



Figure 66: Participants attending Quiz



Figure 67: Amity University Faculty Interacting with IIT Kharagpur Professor.

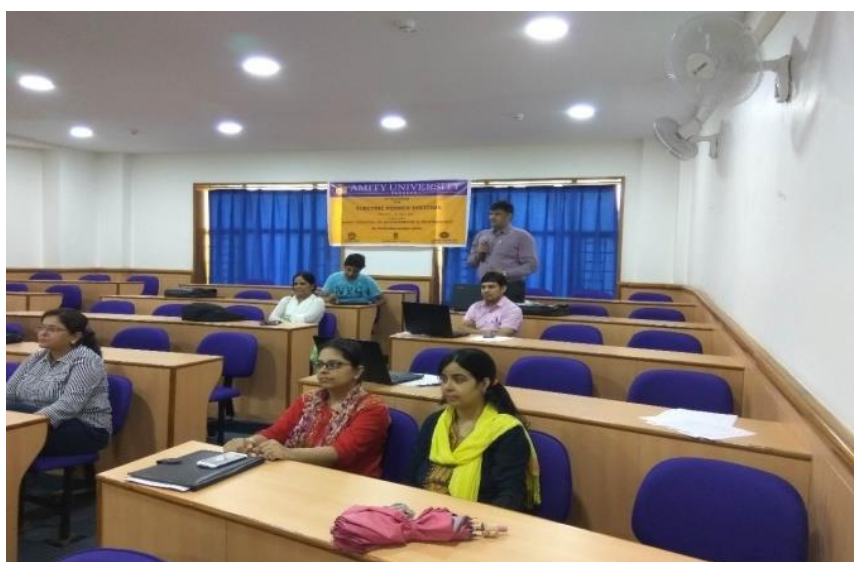


Figure 68: Amity University Faculty Interacting with IIT Kharagpur Professor.

TWO WEEKS WORKSHOP ON FOUNDATION PROGRAM IN ICT FOR

(Aug 3- Nov 10, 2017), (March 18-April 12, 2018)



Amity University Haryana, organized this workshop through ICT in collaborations with Indian Institute of Technology, Bombay. The workshop was fully funded by MHRD through project National Mission on Education. Considering the popularity of the event among the participants, it was organized twice i.e. from Aug 3- Nov 10, 2017 and then from March 18-April 12, 2018.

Objective: The event aims to

- i. Identify various ICT devices and applications useful in teaching-learning
- ii. Develop awareness towards ethical practices for use of ICT in education
- iii. Make use of best practices for information dissemination using ICT

Participation: Fifty one faculty members from different schools of AUH

Funds: The fund of Rs. 42,000 was provided by IIT Bombay to conduct this event.

The FDP was educative in the use of ICT in everyday teaching learning process and making effective use of online resources to create a more dynamic learning experience for the students. Providing students with resources that can be accessed anytime anywhere will improve the learning outcomes, as students can view and review the material and come to the class with a basic knowledge of the topic. This would also help in having discussions in the classroom and any problems faced by the students can be resolved by the teacher more effectively.

In today's technology driven environment, the use of ICT in everyday teaching learning is an essential requirement for teachers to cater to varying student interest and abilities, student focus on exam testing, managing large classes, and so on. However, lack of awareness of both the technology and the effective technology integration practices is a barrier for large-scale adoption in regular teaching-learning process.

The FDP 'Foundation Program in ICT for Education', organized by IIT Bombay provided awareness to both technology and effective practices of technology integration. The focus of the FDP was on integrating ICT in regular teaching learning interactions and moving from a physical classroom setup to a blended physical-online platform. Various tools and technologies like MOODLE, WORDPRESS, creation of video resources using a methodology known as "Screencasting" or "Screen Recording", which are freely available for creation of web resources, were introduced and hands on experience on the same was gathered.



Figure 69: Prof. D B Phatak during interaction with participants



Figure 70: Professor from IIT Bombay interacting with participants.



Figure 71: Prof. Deependra Sharma addressing the participants during the valedictory session



Figure 72: Valedictory session

TWO WEEKS WORKSHOP ON PEDAGOGY FOR ONLINE AND BLENDED TEACHING-LEARNING PROCESS

(Sept 14-Dec 3, 2017), (May 9 - May 31, 2018)



Amity University Haryana, organized this workshop through ICT in collaborations with Indian Institute of Technology, Bombay. The workshop was fully funded by MHRD through project National Mission on Education.

Objective:

- Integrate active learning in their regular teaching-learning practice
- Create an Open Educational Resource to be used in their classrooms
- Justify the blending of online instruction in their regular teaching-learning practice
- Participate in Collaborative Community involved in Open Education Resource creation and dissemination

Participation: Forty one faculty members from different schools of AUH.

The faculty had great learning in terms of teaching pedagogy. They learnt about innovative methods of making their classroom teaching effective where flipped classroom techniques helped a lot where students are supposed to access some content at their places and come prepared in the classroom. The creation of Open Educational Resources, and making effective presentations, the knowledge about various IT means and how to use them in classrooms were also the learning for the faculty. The faculty can use all these learning in teaching-learning process to make it more effective.



Figure 73: Live interaction between the participants and faculty IIT Bombay



Figure 74: Valedictory session



Figure 75: Visit of Prof. D.B Phatak after the conduct of FDP for interaction and feedback from the participants



Figure 76: Dr. P B Sharma, Vice Chancellor, AUH, felicitating Prof D B Phatak



Figure 77: Prof. D.B. Phatak interacting with HOIs of AUH

ONE DAY WORKSHOP ON SCILAB



Amity University Haryana organized one day workshop on Scilab for Faculty on May4, 2019 in association with Teaching Learning Centre (TLC), IIT Bombay, funded by the Pandit Madan Mohan Malaviya National Mission on Teachers and Teaching (PMMMNMTT), MHRD, Govt. of India. The workshop aimed at providing the highly effective Spoken Tutorial based ICT training to a large number of teachers, across the country, through the T10KT methodology, with Scilab.

Scilab is a Free/Libre and Open Source Software (FLOSS), created mainly for numerical computations. It uses the state of the art numerical libraries, such as LINPACK, EISPACK and LAPACK, and hence, its results are highly reliable. A good knowledge of Scilab help improve the employment potential of the students.

Teaching Faculty:

1. Prof. Kannan Moudgalya, Principal Investigator, TLC (ICT), Spoken Tutorial and FOSSEE projects
2. FOSSEE Team members, IIT Bombay

Participation: The workshop was attended by 27 participants (including 3 outstation participants)

Funds: Funds of Rs. 5000 were provided by IIT Bombay to conduct the event.

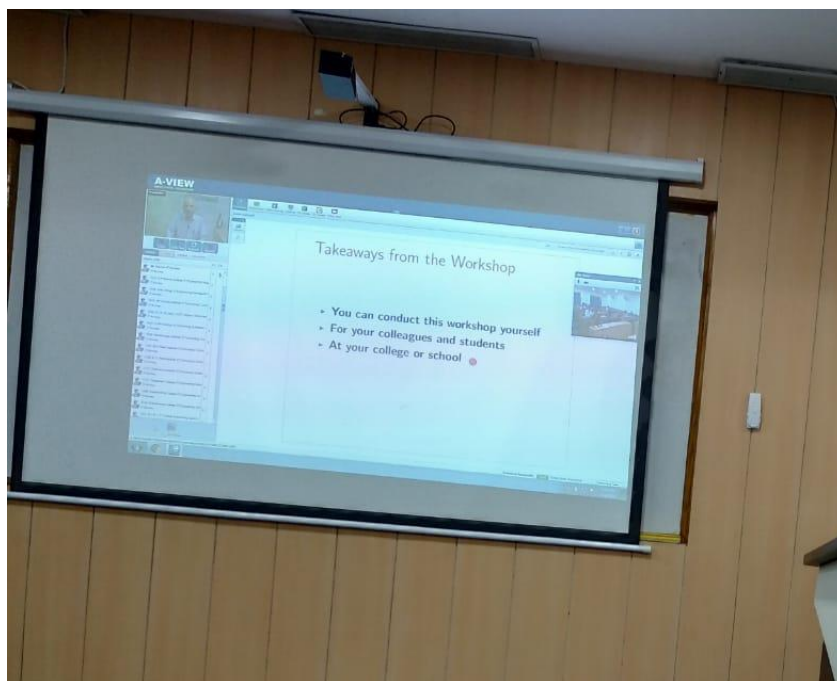


Figure 78: Prof. Kannan Moudgalya discussing topics through A-View

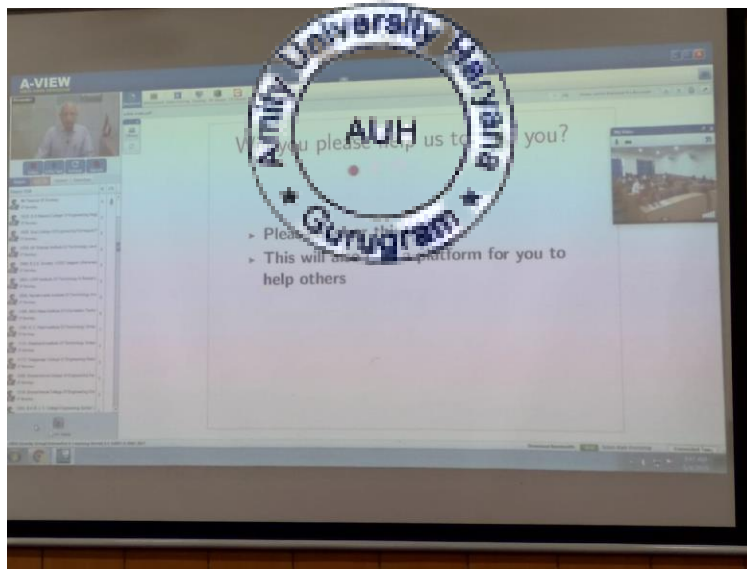


Figure 79: Prof. Kannan Moudgalya discussing topics through A-View



Figure 80: Participants of the workshop

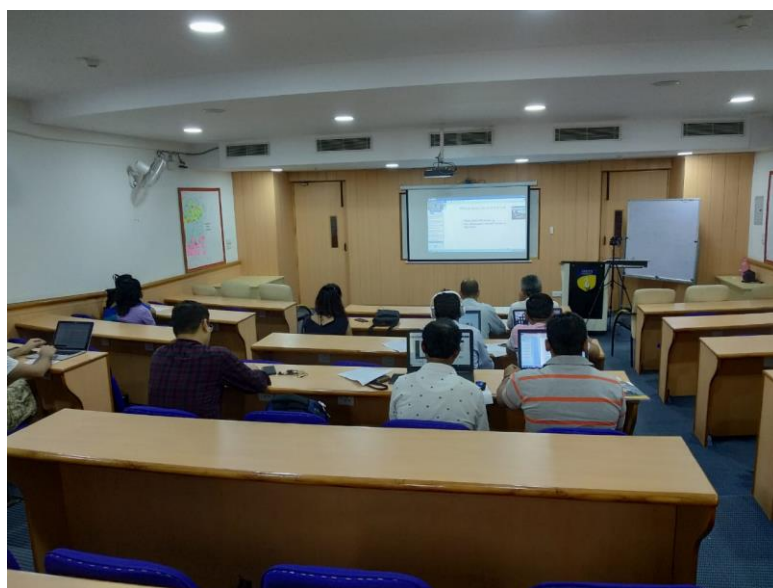


Figure 81: Participants attending the session

ONE DAY WORKSHOP ON PYTHON



Amity University Haryana, Manesar organized this 1 day's workshop through ICT in collaborations with Indian Institute of Technology Bombay and Indian Society for Technical Education. The workshop was conducted in two phases, namely coordinators workshop on May 25, 2019 and main workshop for participants on June 22, 2019. The event was fully funded by National Mission on Education (project of MHRD, Government of India)

Objectives:

This workshop on Python is a course for beginners that may help the attendees to learn the basics of writing and running Python scripts to more advanced features such as file operations, regular expressions, working with binary data, and using the extensive functionality of Python modules. Extra emphasis is placed on features unique to Python, such as tuples, array slices, and output formatting. To enhance the reach of faculty for training programs offered by IITs through QIP (Quality Improvement Programme), a distance education program is launched by IIT Bombay according to which live interaction with faculty attending the conference and teachers at IITs is permitted through a virtual classroom environment, using AVIEW on internet. Here, Lectures were delivered about Python by eminent faculty of IIT Bombay and through spoken tutorial, while tutorials were conducted locally at AUH.

Course Content:

Getting started: Getting started with IPython, Using plot commands interactively, Embellishing a plot, Saving plots, Multiple plots, Subplots, Additional features of IPython, Loading data from files, Plotting data, Other types of plots, Plotting charts,

Basic Level: Getting started with lists, Getting started with for, Getting started with strings, Getting started with files, Parsing data, Statistics, Getting started with arrays, Accessing parts of arrays, Image manipulation using arrays, Basic matrix operations, Advanced matrix operations, Least square fit, Basic data types and operators, Sequence data types, Input-Output, Conditional statements, Loops, Manipulating lists, Manipulating strings, Getting started with tuples, Dictionaries, Sets, Getting started with functions

Teaching Faculty:

- Prof. Prabhu Ramchandran, Department of Aerospace Engineering, IIT Bombay

.Participation: The event was attended by 31 participants including 10 inhouse and 21 outstation participants

Funds: Funds of Rs. 5000 were provided by IIT Bombay for the organization of event.



Figure 82: Lecture being transmitted from IIT Bombay through AVIEW



Figure 83: Discussions during the workshop



Figure 84: Tutorial session during the workshop

ONE DAY WORKSHOP ON LINUX AND WORKSHOP FOR TEACHERS



Amity University Haryana, Manesar organized this 1 day's workshop through ICT in collaborations with Indian Institute of Technology Bombay and Indian Society for Technical Education. The workshop was fully funded by National Mission on Education (project of MHRD, Government of India) . The workshop was conducted in two phases, namely coordinators workshop on August 3, 2019 and main workshop for participants on August 23, 2019.

Objectives:

In this workshop, the blended learning mode (through spoken tutorials and live lectures) was adopted to deliver the basic knowledge and practical implementation of Linux by eminent faculty of IIT Bombay. The tutorials were conducted locally at AUH. To enhance the reach of faculty for training programs offered by IITs through QIP (Quality Improvement Programme) , a distance education program is launched by IIT Bombay according to which live interaction with faculty attending the conference and teachers at IITs is permitted through a virtual classroom environment, using AVIEW on internet.

Course Content:

Linux: Ubuntu Desktop, Desktop Customization, Installing software in Ubuntu Linux, Basic Commands, General Purpose Utilities, File System, Working With Regular Files, File Attributes, Redirection Pipes, Basics of System Administration.

Bash: Introduction to Bash shell scripting, Basics of Shell Scripting, Command line arguments and Quoting, Globbing and Export command, Array operations in Bash, More on Arrays, Conditional execution, Nested and multilevel if elsif statements, Logical Operators.

Linux for Sys Ads: Creating a user account, Assigning Groups on User Creation, User Password management, Modifying User Account, Group Password and Login, Administrating Group with gpasswd Command, Modifying and Deleting Groups.

Teaching Faculty:

Prof. Kumar Appaiah, Department of Electrical Engineering, IIT Bombay

Participation: 26 (including 3 outstation participants)

Funds: Funds of Rs. 5000 were provided by IIT Bombay to conduct the event.



Figure 85: Lab sessions through spoken tutorials



Figure 86: Participants during the workshop



Figure 87: Participants during the workshop



Yunus Social Business Centre at Amity University Haryana¹.

"Once we know where we want to go, getting there will be so much easier." –Muhammad Yunus, Nobel Laureate

1. VISION & MISSION OF THE CENTRE

In keeping with the seven principles of social business as elucidated by Mohammed Yunus, and with an aim to further the vision and aim of the Founder President of the Amity Education Group, the vision and mission of the prestigious Yunus Business Centre at Amity University Haryana (AUH) is laid down as:

VISION:

The AUH-Yunus Social Business Centre, a unique inter-disciplinary center of excellence, would seek to inspire and empower youth to develop innovative and sustainable business models that have social impact while generating jobs and entrepreneurial opportunities to contribute to economic development of the region.

MISSION:

The mission of the Centre would be:

1. To encourage and inspire youth and bring about social awareness for social businesses and social inclusion 'interventions' in form of innovative business models to bring about a change in the lives of underprivileged and marginalized sections of the society.
2. To enable access to students to first hand techniques and programs which have been set up to assist economic development of poor in the backward regions of Haryana.
3. To provide opportunities, know-how and trainings to regional communities, so that they can solve basic human problems by deploying sustainable and profitable business solutions.
4. To sensitize the concept of social business and encourage the village communities to find self-sustaining businesses whilst providing the requisite support through establishing a missing link between institutions /people who have the means and willingness to support communities and between the communities who seek support.

¹ This Concept Note is prepared by Prof. A. M. Jose, ASE-AUH



2. ACTIVITIES OF THE CENTRE

There are three components to our approach at AUH –YSBC:

- (a) *Awareness Building*: It is intended to make youth, especially unemployed, conscious of socio economic problems of development and explore the possibilities of social business to solve the issues in their locality. The programs enable networking opportunities to link up people from the private sector, public sector, academics and civil society to collaborate in developing pro-poor technologies through enterprise –led development.
- (b) *Entrepreneurship Development and Project Implementation*: The AUH-YSBC is for developing social business-oriented entrepreneurial culture. Under this programme, social business projects will be developed not only to reduce and alleviate poverty, but also the social problems associated with it such as health, education, gender-based violence etc. Projects will focus on exploring how technological methods and devices can be applied to the pressing needs of society to empower the people in securing their own livelihoods.
- (c) *Research and Learning*: This offers teaching –learning products in collaboration and partnership with social entrepreneurs, third sector organizations, private sector and academia. It aims to disseminate knowledge around social business and to widen and broaden its very concept and types, range of guided or independent learning opportunities for various levels of learners, from field or community level activists to post graduate students, rooted in best practices and lessons collected from initiatives of social business entrepreneurs.

As part of the above approaches the AUH-YSBC is involved in the following:

(i) **Workshops**

The AUH-YSBC would publish a schedule at the beginning of each academic year that would enlist various planned workshops with an aim to create awareness through public events. The workshops would cultivate a culture of constant exchange on social business ideas. These would provide a platform for people to know more about the idea of social business and learn about the philosophy of Nobel Peace Prize laureate Professor Muhammad Yunus.

The beneficiaries of the workshops are students from regional communities, policy makers in the state, faculty members interested in the topic and youth from marginalized sections of the society along with other stake holders.

(ii) **Skill Building Programs for Rural Youth**



A social business aims to make profit so that it becomes financially sustainable in the long run. It needs to be managed professionally, just like any other business enterprise. Hence, it is imperative that the youth should be guided to convert their creative business ideas into sustainable business models. This cannot be accomplished unless the youth are trained on various aspects of managing a social enterprise successfully. The skill building programs would be specially focused on dissemination of critical information and training amongst those sections of youth who do not easily have access to such trainings. These training programs would be conducted by experts.

(iii) Social Business Labs

Social Business Labs will give a platform to the entrepreneurs to present their social business plans and ideas for critical evaluation to an audience comprising of other budding entrepreneurs, policy makers, successful entrepreneurs, researchers, investors and various other stake holders. These will conduct brain storming sessions at regular intervals for the benefit of budding social entrepreneurs and also provide a platform for them to present their ideas in front of potential investors.

(iv) Student Internships

Students from all streams would be encouraged to do internships with the AUH-YSBC for which the faculty members would provide them with the required support, guidance and hand-holding throughout the tenure. This would prove to be a good breeding ground for social business incubations and creative ideas to solve pressing human problems. These could entail field trips to successful social business sites to learn from those who are working at the ground level.

(v) Scholarships

The AUH-YSBC would encourage research /projects /dissertations/incubate small scale social businesses. One of the ways to do this would be to encourage meritorious students to choose social business as the theme for their research study. The policy for grant of scholarships would be decided by the AUH-YSBC Head with discussions and advises from the Honorable Chancellor, Vice Chancellor and other mentors.

(vi) Publications

AUH-YSBC would be committed towards bringing about awareness about the concept of 'Social Business and its relevance in solving human problems' in order to sensitize the university communities (students, faculty members etc.) and the communities with large number of socially deprived and marginalized sections.

In order to achieve this aim, it is proposed that the AUH-YSBC would document, publish and disseminate information on the concept and the initiatives being taken around the world in general



and by AUH-YSBC in particular; through a bi-monthly publication in form of a magazine. Similarly, the research undertaken by the AUH-YSBC would be disseminated as widely as possible through publications in form of working papers and presentations at conferences/seminars/workshops.

3. EXPECTED OUTCOMES

The AUH-YSBC would function with the sole aim of making a difference in the lives of the down trodden and marginalized sections of the society through academic research, sensitization, trainings and awareness building. Various areas like microfinance, livelihoods based on agriculture and animal husbandry, business ethics, building sustainable communities are common areas on which social business and entrepreneurship can be taken up. Empowering women in Haryana and eradication of socio-economic inequality along with ensuring prosperity to marginalized sections of the society are the ultimate outcomes that we expect from AUH-YSBC.



AMITY University Haryana
Amity Centre for Linguistic Studies (ACLiS)
Progress Report

1. OBJECTIVES AND SCOPE OF THE CENTRE

Amity Centre for Linguistic Studies (ACLiS) wishes to become **Socially Useful** and **Responsive** – rather than being a merely esoteric centre of excellence. The objectives and future directions would include the following:

- (1) World Class Research, Documentation & Archiving in a collaborative manner
- (2) Courses in Applied Linguistics & Language Teaching could generating Employment or enhancing teaching skills
- (3) Productization of Teaching & Training Materials,
- (4) Creative Writing & Art Practices,
- (5) Translation – Textual & Inter-Semiotic,
- (6) Generating Research Grants, and
- (7) Turn-key Tasks, Consultancy, Evaluation & Information Dissemination

2. ACADEMIC PROGRAMS

Courses being offered/ Research through ASLA are -

MA/PhD in Applied Linguistics & ELT/FLT (with focus on Language Technology & Language Management) with ASLA & FL.

Focus : English Language Teaching, Foreign Language Teaching, Translation Studies, Studies on Language-Culture Interface, Endangered Languages Documentation, Natural Language Processing (NLP), Lexicography (Art & Science of Dictionary-making), Online Language Teaching material Development, Simultaneous Translation, Dubbing & Subtitling, Language Testing Techniques, Language Reforms (including Script & Font designing and Spelling reforms), Planning, Management of Endangered Languages and Culture, Digital Ethnography and Archiving.

OE in Tagore Studies (UG), esp. the following:

- [ENG 2152] Rabindranath Tagore in the 21st Century
- ENG2252 Tagore: Autobiographies and Biographical Sketches
- ENG2352 Tagore as a Cultural Icon –
- ENG2452 Tagore as a Poet
- [ENG 2552] Tagore as a Fiction Writer
- [ENG 2652] Tagore and Mass Media

3. MANPOWER

A. FACULTY –

1. Prof. Udaya Narayana Singh (Dean, Faculty of Arts & Chair-Professor of Linguistics)



2. Dr. Gulab Chand (Assistant Professor) 03/01/2019

B. OFFICE STAFF

1. Mr. Ajay Bir (office Executive)
2. Brahm Singh (peon)

4. COURSES TAUGHT

Prof. Udaya Narayana Singh

UG:

Introduction to Linguistics for BA German (H) V Sem (GER2504, currently)
Introduction to Linguistics for B.A. French (H) (FRE2505, earlier)

OE – Tagore Studies, esp. the following:

[ENG 2152] Rabindranath Tagore in the 21st Century
ENG2252 Tagore: Autobiographies and Biographical Sketches
ENG2352 Tagore as a Cultural Icon –
ENG2452 Tagore as a Poet
[ENG 2552] Tagore as a Fiction Writer
[ENG 2652] Tagore and Mass Media

PG:

Dissertation under ASCO (JRN 4331)

PhD.

Linguistics and English Language Teaching (ENG 5003)

Additional Teaching Activities:

1. Delivered a series of lectures on ‘Research Methodology’ to Ph.D., MA as well as B.A. (Hons) students.
2. Organized jointly a Faculty Development Program (FDP) with participants from different universities on 24th April 2017. The event was called the First National Symposium on the Significance of Language and Linguistic Studies.
3. Orientation Workshops in Liberal Arts Research, 2018,2019,2020

Courses Taught (2019-2021)

Dr. Gulab Chand

- A. I have taken offline classes for BA English (H) II Sem, and conducted CS workshop for different semester in other departments.



- B. I have been taking online classes for BA French (H) V Sem, and conducting CS workshop for other departments.

5. PUBLICATIONS:

5.1. RESEARCH PAPERS

(2019-2020)

1. Singh, Udaya Narayana. 2020. 'Kata sahajei kata '. (In memory of Prof Anisuzzaman, National Professor of Bangladesh) *Ei Samay* (Daily, Sunday Supplement, Page 1. 17th May Number).
2. Singh, Udaya Narayana. 2020. 'Pabitra Sarkar: Ek Asamanya Bhashajapan.' *Ebong Mushayera*, 26.2-3 (Special Volume: 'Gadyakar Sankhya', ed. By Subal Samanta) 141-55.
3. Singh, Udaya Narayana. 2019. 'Challenges for SLT in a heterogenous space' *International Journal of Innovations in TESOL & Applied Linguistics (IJITL)*, Vol 2.3, ISSN 2454-6887.
4. Singh, Udaya Narayana. 2019. 'Prof Udaya Narayana Singh 'Nachiketa' san Deoshankar Navin kervarta' *Bharati Mandan* (Ed by Kedar Kanan), June 2018 number; Vol. 14.2.
5. Singh, Udaya Narayana. 2019. 'Prem, Utsav, Samarpan' *Mithila Darshan*, January 2019; Vol 9.1.
6. Singh, Udaya Narayana. 2019. 'Alochanak Pratiman' *Mithila Darshan*, March, 2018; Vol 8.2.
7. Singh, Udaya Narayana. 2019. 'Shreya aur Preya' *Mithila Darshan*, Vol 9.3 (May-June, 2019)
8. Singh, Udaya Narayana. 2020. 'The Contemporary Maithili Thinking as Reflected in Literature'. Essay for *Inter-Actions*, the interdisciplinary digital quarterly of LILA Foundation for Translocal Initiatives (www.lilafoundation.in).
9. Gulab Chand and Urjani "Analyzing Book Reviews within Indian Narrative Tradition" *The IUP Journal of English Studies*, Vol XIV. No.4, ISSN 09733728 (Scopus SJR Q4) Impact Factor: 2.05.

(2018-2019)

1. 2019. Nation, Nationality and linguistic Marginality, In *Indian Languages and Culture: A Debate*, eds by Kailash Pattanaik & Arimardan Kumar Tripathy; The Marginalised Publication, pp 15-24.
2. 2019. 'Prem, Utsav, Samarpan,' *Mithila Darshan*, Vol 9.1 (January number): pp 2-3.
3. 2019. 'Shreya aur Preya' *Mithila Darshan*, Vol 9.3 (May-June number): pp 2-3.

(2017-2018)

1. 2017a. 'Rabindranath Tagore: Ideas on Art.' Originally delivered as an ICCR lecture, Moscow, Russian State University, Moscow in 2011; Published in Reba Som ed. *Tagore Vision of the Contemporary World: Tagore and Russia.* New Delhi; ICCR.



2. 2017b. 'Manifesto of the Unwritten World: The Curse of Dialects.' In Anvita Abbi, ed. *Unwritten Languages of India*. New Delhi: Sahitya Akademi. 106-116.

5.2. FULL PAPERS IN CONFERENCE PROCEEDINGS

(2019-2020)

1. Singh, Udaya Narayana. 2019. 'Battered society, broken minds, trauma and triumph depicted through the language of the fishermen: A reflection on the intertwined notions of language, culture and identity through select post-1971 Bangla novels' With Rajib Chakraborty, International Conference on "Indigenous Languages, Societies and Cultures of India", 21-22 February 2019 on University of Hyderabad

2 Singh, Udaya Narayana. 2019. "Gandhi as reflected in Tagore's biographical sketches". National Seminar on 'Gandhi in Indian Literature', As a part of "Festival of Letters", Sahitya Akademi, New Delhi; 28th Jan to 2nd Feb 2019 Mimeo

3 Singh, Udaya Narayana. 2019. "Metaphor of Death: Crisis of Dialects" UNESCO & IGNCALecture, New Delhi, 29th March 2019 Mimeo

(2018-2019)

4.Singh, Udaya Narayana. 2018. 'Challenges for SLT in a heterogenous space' (<https://ijital.org/archive6.html>) *International Journal of Innovations in TESOL & Applied Linguistics (IJITL)*, Vol 2.3

(2017-2018)

5.Singh, Udaya Narayana. 2017. 'Tagore's Views on Dharma-Artha-Kaarya: The Concept of activating Socio-Economic Reforms for a Just Living,' In an anthology, edited by Sebak Jana. New Delhi.

6.Singh, Udaya Narayana. 2017. 'Tagore's Idea of Art'. In Indra Nath Choudhury & Reba Som eds. *Tagore Vision of the Contemporary World: Tagore and Russia.* New Delhi: Har Anand (Sponsored by the ICCR, New Delhi).

7.Singh, Udaya Narayana. 2017. 'Manifesto of the Unwritten World: The Curse of Dialects.' In Anvita Abbi, ed. *Unwritten Languages of India*. New Delhi: Sahitya Akademi. 106-116.

8.Singh, Udaya Narayana. 2017. 'View from Below: Utopia and Change'. (Jointly with Rajarshi Singh) In Atul Thakur, ed. *India Now and In Transition*. New Delhi: Niyogi Books. 409-22.

9.Singh, Udaya Narayana. 2017. 'Manifesto of the Unwritten World: The Curse of Dialects.' In Anvita Abbi, ed. *Unwritten Languages of India*. New Delhi: Sahitya Akademi. 106-116.

10.Singh, Udaya Narayana. 2017. 'View from Below: Utopia and Change'. (Jointly with Rajarshi Singh) In Atul Thakur, ed. *India Now and In Transition*. New Delhi: Niyogi Books. 409-22.

11.Singh, Udaya Narayana. 2017. 'Nischay-Anischay Chayner Mul,' Parikatha (Ed by Debabrata Chakrabarty), Special Volume on 'Translation', Vol. 19.1, pp 81-86.



12. Singh, Udaya Narayana. 2017. 'Panchanan Mandal O Tribhasha Abhidhan Prasange'. *Punthi-Pragnik Panchanan Mandal: Charcha O Charya*. Kolkata: Sopan, pp 269-276.

13. Singh, Udaya Narayana. 2017. Higher education in India and focus on three Cs, *University News* 55.49 (Dec 2017) Pp 26-28

5.3. ARTICLES/ CHAPTERS PUBLISHED IN BOOKS

Udaya Narayana Singh

(2019-2020)

14. **Udaya Narayana Singh**. Nation, Nationality and linguistic Marginality, Indian Languages and Culture: A Debate, eds by Kailash Pattanaik & Arimardan Kumar Tripathy; The Marginalised Publication.

(2018-2019)

(2017-2018)

15. Singh, Udaya Narayana. 2017a. 'Rabindranath Tagore: Ideas on Art.' Originally delivered as an ICCR lecture, Moscow, Russian State University, Moscow in 2011; Published in Reba Som ed. Tagore Vision of the Contemporary World: Tagore and Russia.' New Delhi; ICCR.
16. Singh, Udaya Narayana. 2017b. 'Manifesto of the Unwritten World: The Curse of Dialects.' In Anvita Abbi, ed. Unwritten Languages of India. New Delhi: Sahitya Akademi. 106-116

5.4. BOOK CHAPTERS completed/submitted:

17. Singh, Udaya Narayana Singh, Rajarshi Singh & Padmakali Banerjee. 2020. 'Learning Challenges for the Marginalized: Opportunities within the Heterogenous Landscape of India.' IIEP-UNESCO Volume, edited by Dan Wagner et al.
18. Singh, Udaya Narayana. 2020. 'Saikat Rakshiter Kathanbishwa: Abhishapta Jibaner Bhasha o Bhashya.' In Shubhodeep Mukhopadhyay, ed. Essays on Saikat Rakshit, Kolkata: Tarunno Sahitya.

5.5. BOOKS PUBLISHED as Author or as Editor/Translator

(2019-2020)

1. Singh, Udaya Narayana. 2019. अल्पसंख्यक भाषा एवं संस्कृति : भारतीय संकटग्रस्त भाषायी सर्वेक्षण हेतु निर्देशिका Visva-Bharati, Santiniketan & The Marginalised Publications 978-93-87441-29-3



2. Singh, Udaya Narayana. 2019. **Eurokendriko Shilpa-Sanskriti**; Bangiya Sahitya Sansad, Kolkata 978-9386508382.
3. [Forthcoming] Singh, Udaya Narayana. 2020-21. *Sukumar Sen – A Great Chronicler of Time* (Makers of Indian Literature Series). New Delhi: Sahitya Akademi.
4. [Forthcoming] *Beyond Language: Towards Silence – Tagore's Journey Into Art and Poetry*. New Delhi: Orient Blackswan.

(2018-2019)

Nil

(2017-2018)

5. Singh, Udaya Narayana. 2017. **Vachana**: Translation of 2500 Medieval Kannada Vachana poems into Maithili. Bangalore: Basava Samithi & Govt of Karnataka. Released by the Prime Minister, Shri Narendra Modi in a function at Vigyan Bhavan on 29th April 2017 along with translation of the text in 22 Official languages of India.
6. Singh, Udaya Narayana. 2017. **Jahalak Diary**. [A book of poems in Maithili]. Santiniketan/New Delhi: E-Lekhan.

5.6. Books/Festschriften Dedicated to Udaya Narayana Singh & Released in April, 2017 in Delhi by Professors Kapil Kapoor, Abhai Maurya, Sreesh Choudhary, Vaishna Narang, R.C.Sharma. K.K.Goswami and Anchor Rahul Dev:

- A. 2017. Fabric of Indian Linguistics: A Festschrift in Honor of Prof Udaya Narayana Singh, Eds by S.K.Singh, Abhishek Kumar Kashyap, Badaplin War, Saralyn A. Lingdoh & Barika Khyriem. New Delhi.
- B. 2017. Spheres of Indian Sociolinguistics: A Festschrift in Honor of Prof Udaya Narayana Singh, Eds by S.K.Singh, Imtiaz Hasnain & Abhishek Kumar Kashyap. New Delhi.
- C. 2017. Translation – Try Thy Metaphor: A Festschrift in Honor of Prof Udaya Narayana Singh, Eds by S.K.Singh & Aparupa Dasgupta. New Delhi.
- D. 2017. Linguistic Ecology: Mizoram: A Festschrift in Honor of Prof Udaya Narayana Singh, Eds by S.K.Singh, Rajesh Kumar, C. Omprakash & C. Lalremzami. New Delhi
- E. 2017. Ways with Languages: : A Festschrift in Honor of Prof Udaya Narayana Singh, Eds by S.K.Singh, Kavita Rastogi, Prasannanshu, Arimardan Kumar Tripathi & Jayati Chatterjee. New Delhi.
- F. 2017. भाषा, समय और संवाद: प्रो. उदय नारायण सिंह अभिनन्दन ग्रन्थ. (संपादक: शैलेन्द्र कुमार सिंह और अरिमर्दन कुमार त्रिपाठी). दिल्ली.5.



5.7. PAPERS SUBMITTED

1. Urjani Chakravarty, Gulab Chand and Udaya Narayana Singh Paper submitted on “Millennial Travel Vlogging & Virtual Tourism during the time of Covid 19” in WHATT (ABDC indexed Journal).

5.8. National & International Talks/Events

Udaya Narayana Singh

1. April 10-14, 2017. Plenary Talk – ‘Translating the World: An Asian Perspective. 1st International congress on Translation – CMT. Paris: university of Paris at Nanterre. Workshop on the State of Play for Translation Studies in the World: India, Coordinators: Prof Annie Montaut & Francois-Xavier Durandy from INALCO, Paris.
2. April 20, 2017. ‘Treasure of Tranquility: What Education can do for us?’ 26th Gopinath Mohanty Memorial Lecture, Odisha Sahitya Academy, Bhubaneswar.
3. April 23, 2017. Future of Indian Linguistics. Lecture at the Narayani Sahitya Academy Seminar on Substantiating, Blending and Augmenting Linguistics – On Contemporary Issues in Indian Linguistics and Languages; Hindi Bhavan, 23.4.2017.
4. Currently discussing with ADCC, Nagpur for a collaborative project in Natural Language Processing
5. Also drafting an RFP with Athena Infomics, Chennai for a possible project in the area of Social Development vis-à-vis Indian Languages
6. Chaired the Industry On-Board Meeting of the NBGP, or the Neo-Brahmi Generation Panel of the ICANN (California) – the Internet Governing Authority in Eros International, Nehru Place, New Delhi on 8th March 2017.
7. Chaired the PRSG on Shallow Parser in 19 Indian Languages, (Electronics Niketan, New Delhi); Department of Electronics, Ministry of Communication & Information Technology, Government of India.
8. Continued to attend Academic Council and Court Meetings of JNU as External Member.
9. Appointed Editorial Board member of the *Journal of Multicultural Discourses*, published by the Taylor & Francis.
(<http://www.tandfonline.com/toc/rmmd20/current>)
10. Appointed Editorial Board member of the *Journal of Intercultural Communication*, Sweden (<http://www.immi.se/intercultural>)
11. Appointed Editorial Board member of the journal – *The Mother Language*, published by the IMLI, Dhaka.
12. Continued to act as Chair-person, PRSG of the Major Project on Shallow Parsing Tools, MC&IT, Govt of India.
13. Examined a Ph.D. Dissertation on ‘Marking Ethnicity by Means of Proper Names and the Use of Slang: The Case of Anglo-Indians in Hyderabad’ of EFLU, Hyderabad and sent the report.



5.9. WORKING PAPERS:

1. Gulab Chand. Mimeo. “English Language Teaching: A Socio-Cultural perspective”
2. Gulab Chand, Mimeo. “Corpus Linguistics: A Platform to English Language Teaching”
3. Urjani Chakravarty, Gulab Chand, and Udaya Narayana Singh “ Millennial Travel Narratives and Domestication of YouTube”
4. Gulab Chand, Urjani Chakravarty, and Udaya Narayana Singh “Exploring Multilingual Humour Frames on Social Media Platforms: An Indian Perspective”

6. PARTICIPATION AND PRESENTATION in Workshops/Seminars/ Trainings/ Schools

International

1. **Dr. Gulab Chand** : 8th IPSA-Summer School (National University of Singapore, Singapore) “Applied Data Analysis” 1-12, July 2019
2. **Dr. Gulab Chand** : LOT-Winter School (University of Tilburg, Netherland) “Discourse Markers and Pragmatic Particles in Use” 13-17, Jan 2020
3. **Dr. Gulab Chand** : LOT-Winter School (University of Tilburg, Netherland) “Multimodality 20-24, Jan 2020
4. **Dr. Gulab Chand. 2020.** “Exploring Phono-Syntactic Interface through Modality Markers” at FIFTH BELGRADE INTERNATIONAL MEETING OF ENGLISH PHONETICIANS, 20-21 March 2020, organized by The English Department and the Belgrade Phonetics Lab of the Faculty of Philology, University of Belgrade, Serbia.

National

5. Singh, Udaya Narayana. 2020. ‘Designing our Linguistic Landscape: First Lessons in Language Planning.’ Weekly e-Lecture Series-4, Organized by Tamil Mozhiyyal Sangam. Webinar on Zoom, 13.6.2020. (ID: 846-4941-2813, 7 pm)
6. Singh, Udaya Narayana. 2020. ‘Translating the World: Asian Perspectives in Translation.’ International Webinar Series of Linguistics-4, Organized by Bhasha-Cintan (KMI-Agra, BHU-Varanasi, BHU-IIT-Varanasi & MAHE-Manipal). Webinar on Zoom, 20.6.2020 (ID: 821-4210-2881, 6 pm)
7. Gulab Chand. 2020. “Exploring Phono-Syntactic Interface through Modality Markers” at FIFTH BELGRADE INTERNATIONAL MEETING OF ENGLISH PHONETICIANS, 20-21 March 2020, organized by The English Department and the Belgrade Phonetics Lab of the Faculty of Philology, University of Belgrade, Serbia.



7. EVENTS ORGANIZED

1. Webinar on “Nuances of field work in carrying out language studies in North-East”. 13 May 2020
2. Webinar on “Sylhet Nagari: The Shaping of Selfhood” 15 May 2020.
3. Webinar on “Role of Television in Public Healthcare” 22 May 2020.
4. Kakoli Dey, Associate Professor (Humanities), Galgotias College of Engineering and Technology, Greater Noida (UP): ‘Nuances of Field Work in Carrying Out Language Surveys in the North-East.’ On Webex, 13.5.2020; 2.30 pm.
5. Mina Dan, Professor of Linguistics, University of Calcutta: ‘Sylhet Nagari: The Shaping of Selfhood.’ On Webex, 15.5.2020; 2.30 pm.
6. Pramod Jha, Formerly Director, DD-Jharkhand: ‘Role of Television in Public Healthcare.’ On Webex, 22.5.2020; 2.30 pm.
7. Royer Dario Ramos Gomez, Universidad Nacional Abierta Distancia, Santa Marta, Columbia: ‘Virtual Education and its Advantages During Covid19 Pandemic.’ On Zoom (ID), 18.6.2020, 4 pm.
8. Amitabh Vikram Dwivedi, Shri Mata Vaishno Devi University, Katra, J&K: ‘Understanding Language: Few Insights from Saussure and Chomsky.’ On Zoom (ID 839-0516-8982), 17.6.2020, 2.30 pm.
9. Piero Cossu, Pisa University, Italy: ‘Orthography and Phonology: The Interface.’ On Zoom (ID), 22.6.2020, 2.30 pm.

8. EVENTS/ OUTCOMES (Webinar Conducted and talk delivered during 2019-2020) CONVENED:

1. Kakoli Dey, Associate Professor (Humanities), Galgotias College of Engineering and Technology, Greater Noida (UP): ‘Nuances of Field Work in Carrying Out Language Surveys in the North-East.’ On Webex, 13.5.2020; 2.30 pm.
2. Mina Dan, Professor of Linguistics, University of Calcutta: ‘Sylhet Nagari: The Shaping of Selfhood.’ On Webex, 15.5.2020; 2.30 pm.
3. Pramod Jha, Formerly Director, DD-Jharkhand: ‘Role of Television in Public Healthcare.’ On Webex, 22.5.2020; 2.30 pm.
4. Anik Nandi, Fellow, Sociolinguistic Seminar of the Royal Galician Academy of Languages, Spain: ‘On Language Policy (and its Place in Applied Linguistics).’ On Webex; 12.6.2020, 2.30 pm.
5. Somdev Kar, Indian Institute of Technology, Ropar, Punjab: ‘How do we say 'Africa'? From the angle of Optimality Theory". On Webex, 15.6.2020, 11.30 am.
6. Royer Dario Ramos Gomez, Universidad Nacional Abierta Distancia, Santa Marta, Columbia: ‘Virtual Education and its Advantages During Covid19 Pandemic.’ On Zoom (ID), 18.6.2020, 4 pm.
7. Amitabh Vikram Dwivedi, Shri Mata Vaishno Devi University, Katra, J&K: ‘Understanding Language: Few Insights from Saussure and Chomsky.’ On Zoom (ID 839-0516-8982), 17.6.2020, 2.30 pm.
8. Piero Cossu, Pisa University, Italy: ‘Orthography and Phonology: The Interface.’ On Zoom (ID), 22.6.2020, 2.30 pm.
9. Kamal Kumar Chowdhary, Indian Institute of Technology, Ropar, Punjab: ‘Language and Cognition". On Zoom, 22.6.2020, 11.30 am.



Talk Delivered by Prof. U.N. Singh

1. Principles and Practices in Humanities Research
2. Documentation of Endangered Languages
3. After the Deluge: An Action Notebook for a Responsible Sociolinguist
4. Hindi aur Bhartiya Bhashayen Digital Platform Organized by Dainik Jagran ,13/9/
5. “Towards a Social History of Linguistics in India: NOSTALGIA FOR THE FUTURE” Organized by bahuvrihi, www.bhurihi.com
6. Webinar on Negotiating Multilingual Childhood: Language Organized by Madhubani Literature Festival Programme on Facebook live & YouTube, through Streamyard recording
7. National Webinar “Promotion of Indian Languages” and NEP 2020 Expert Views, CIIL Mysore, Ministry of Education, Govt. of India

S. No	Webinar title and Speaker	Co-convenor and Chief Convenor	Pictures
1	Webinar title: Approaching language policy and planning critically: Research from Galicia (Spain) and Northern Ireland (United Kingdom) Dr. Anik Nandi	Dr. Gulab Chand Prof. U.N. Singh	



<p>2</p> <p>How do we say 'Africa'? Looking into gemination through Optimality Theory</p> <p>Dr. Somdev Kar</p>	<p>Dr. Gulab Chand</p> <p>Prof. U.N. Singh</p>	
<p>3</p> <p>Language and Cognition: Electrophysiology of Language Comprehension</p> <p>Dr. Kamal K. Chaudhary</p>	<p>Dr. Gulab Chand</p> <p>Prof. U.N. Singh</p>	
<p>4</p> <p>Principles and Practices in Humanities Research</p> <p>Prof. U.N. Singh</p>	<p>Prof. Sanjay Kumar Jha</p>	
<p>Documentation of Endangered Languages</p> <p>Prof. U.N. Singh</p>	<p>Dept. of Linguistics, Central University of Kerala (Online)</p>	



9. ACHIEVEMENTS:

UDAYA NARAYANA SINGH

1. **Sahitya Akademi Award, 2017, received in February 2018**
2. **Ila Foundation Award, 2018**
3. **Grant from CMT. Paris: University of Paris at Nanterre for 1st World Congress of Translation**
4. **Grants from ICANN, California for a NBGP Meeting in Nepal and Bangladesh**
5. **Attended ICANN World Congress in Tobe, Japan, 2019**
6. **Received a Sahitya Akademi grant for a National Seminar-cum-Workshop at Amity University Haryana**

GULAB CHAND:

1. Performing task as LMS coordinator for ACLiS.
2. I have been the part of the data collection and analysis team for Mediating Multilingualism in a Local Community Context: An Indo-Scottish Project.
3. I am actively participating in e-meetings for the “Mediating Multilingualism” project.

10. Funded Joint Research Proposals submitted / under preparation

Ongoing/ Completed

S.No	Title	Agency	Period	Grant/ Amount Mobilized (Rs Lakhs)
1.	Mediating Multilingualism in a Local Community Context: An Indo-Scottish Project	University of Highlands & Islands (UHI), UK	January 2019 onwards	GBP 25,700
2.	History of Maithili Language Monograph	Govt of Delhi	2018-19; Continuing Maithili-Bhojpuri Academy, Delhi	0.75 lakh

11. VISION: To become among the top Linguistics Centres in India in coming years and globally recognized as a centre of excellence in contemporary Linguistic environment with focus in nurturing and developing ethos, values and practices of Indian languages blended with the agility of the Western Linguistics practices.

12. MISSION: Our mission is to provide industry ready and socially sensitive holistic Linguists per excellence able to add value to themselves, their family, their place or work as well as to the country under all conditions.



**KAILASH SATYARTHI CENTRE FOR
CHILD RIGHTS & DEVELOPMENT**

AMITY UNIVERSITY HARYANA
PACHGAON, DT GURUGRAM, PIN 122413

A Progress Report

The *Kailash Satyarthi Centre for Child Rights and Development [KS-CCRD]* within the fold of **Amity University Haryana** envisions to work towards securing a free and innocent childhood for all our young citizens in India. The children constitute 39 percent of our 1.21 billion population (with 48% female and 52% male children), out of which about 29 percent are in the age group of less than five years who too face abuses and violence.¹ Moreover, as 73% of our children live in rural areas from where child rights violations are not reported regularly, it is important to lend them a voice by studying, documenting and reporting their problems. It is equally important to work with and for the urban children, and especially the street children and the lost children.

1. Aims and Objectives

The following are the **objectives** of the Centre:

- To raise awareness of the Child-related Issues in India, and use the Centre as well as Amity TV for this purpose;
- To study all laws, best practices and provisions in the country to help children as well as identify research gaps and problems with current policies
- To work in collaboration with like-minded agencies, individuals, institutions and forum to help the government create a data-archive so that responses and solutions could be found quickly;
- To create a moral force to stand by the abused or helpless children and protect their rights to childhood;
- To make appropriate recommendations to the State-level and District/Block-level authorities to adopt quick measures for a desired action.
- To conduct proper research and documentation, the Centre aims at offering both formal and non-formal academic programmes for dedicated personnel in the field, conscientious citizens, government and non-government officials related to policy-framing and implementation, and others – especially from the vulnerable and disadvantaged sections of our Society.

Centre Director (I/C): Prof Udaya Narayana Singh, Dean, Faculty of Arts

- **Faculty: Yet to be appointed**
- **Year of Establishment: 2018 (Through the announcement in the AUH Convocation by the Hon'ble Chancellor, AUH)**

¹ <http://www.childlineindia.org.in/child-in-india.htm>



2. Initiation:

- In April 2018, both Vice-Chancellor, Amity University Haryana and Chair-Professor – Prof Udaya Narayana Singh were invited to participate in the **Research Symposium: EVERY CHILD MATTERS, Bridging Knowledge Gaps for Child Protection in India** on Thursday, 17 April, 2018, at the India Habitat Centre, New Delhi. The discussion on collaboration between the Kailash Satyarthi Foundation and Amity University Haryana started from that meeting. With the establishment of the National Commission for Protection of Child Rights, or NCPCR (<http://www.ncpcr.gov.in/>) in India since 2007, and with extensive media coverage of many incidents of violation of child rights or abuse of children, there is a greater awareness of the problems facing all developing countries.
- **This was followed by a formal meeting between the Nobel laureate Kailash Satyarthi-ji and his team and the Vice-Chancellor, AUH along with Prof U N Singh.** The meeting was held at the Kailash Satyarthi Foundation for Children (KSFC), A-23, Mathura Road, Friends Colony West, New Delhi - 110065 on 25th May 2018. It was also attended by Ms Sumedha Kailash, Director, Bachpan Bachao Andolan; Dr Subhadra Menon, Executive Director, Health (research), KSFC, Asmita Satyarthi, KSFC, and two young faculty from Psychology (AIBAS) at AUH - Dr Kamini Tanwar and Dr Tanu Kukreja.
- As a background to the discussion meeting, a Policy Paper set up a ‘Kailash Satyarthi centre for Child Rights & Development’ at the Amity university Haryana as announced by Dr Aseem Chouhan, the Chancellor of Amity university Haryana during the Convocation of the Amity university in 2018. The **Kailash Satyarthi Centre for Child Rights and Development [KS-CCRD]** established within the fold of Amity University Haryana would work towards securing a free and innocent childhood for all our young citizens in India.
- Shri Kailash Satyarthi opened the meeting with recollection of the discussions held at the recently concluded Symposium titled ‘Every Child Matters’ on 17th April, 2018 at the India Habitat centre which was also participated by the Amity university Haryana. He emphasized on the identification of the research gaps in Child Protection and development. He complimented the Amity university Haryana for having come up with a very comprehensive Policy paper on establishment of the proposed Centre. He promised all academic and research support for the Centre from the KSFC.
- The Vice-Chancellor narrated the background of the activities that had been thought about in Child Rights and Development and suggested that the proposed Centre could be a multi-disciplinary one drawing resources and voluntary participation from different schools. Initially, it would begin with some core faculty members. He sought confirmation for the name – ‘**Kailash Satyarthi Centre for Child Rights and Development [KS-CCRD]**’ proposed by the AUH, to which there was a general agreement.
- The discussions centred around how the field of Child Rights could become an academic discipline attracting brilliant minds and action-oriented individuals as well as project support. Like D.Child. in CCR, Ireland, or M.Sc. Child Rights there could have their counterparts in Amity University Haryana campus beginning from 2019.
- It was appreciated that the proposed **Kailash Satyarthi Centre for Child Rights & Development (KS-CCRD)** could offer both formal as well as less formal training programmes in future using different modes of delivery. It was also suggested that AUH could make ‘Child Rights & Development’ as either a Minor Track discipline open to all, or make it a part of “Value-Added Course” for all students with a set of action to be taken by the volunteer



participants. This could begin with the AUH campus but could also be spread to other Amity campuses as well.

- It was proposed that a limited number of deserving, qualified and interested students with challenging research ideas could be admitted as research students to a combined Degree Program including **Master of Child Rights Studies** as well as **Doctoral of Philosophy (Ph.D.) in Child Rights & Development** (Five students each under M.Phil and PhD levels). The admitted students will be placed under a research committee with a Chair as her/his Principal Supervisor where the co-supervisors could be from the KSFC.
- It was well appreciated that the proposed Centre (KS-CCRD) at AUH would also offer Intensive Workshops (based on both intellectual inputs and surveys/experiments/ case studies) on Indian problems and issues in Child Rights and Child Development –for the NGO workers, Survey Professionals, Executives or Management Personnel, etc. The focus of these special short-term courses would be to highlight problems that would span across legal rights, socio-political awareness as well as action, communication and social media issues, elementary and school education (including special education), health and psychological issues. In delivery of these MDPs and FDPs, KSFC would also join AUH in both designing and implementation. Refresher Courses and Short-term workshops could also be thought about.

3. Follow-up Internal Discussions and Meetings

(9th Oct 2018 & 25th April 2019):

- As some internal discussions and thinking together happened within AUH, it was realized that there are units such as Gujarat State Child Protection Society in Gandhinagar,² Centre for Child Rights Archive under the publications such as *'The Wire'*³ and many other initiatives but facilities such as the *Centre for Child and the Law (CCL)*, established in 1996) under the National Law School of India University (NLSIU) in Bangalore,⁴ or *The Centre for Child Rights*⁵ (CCR) as in the Queen's University, Belfast in the Ireland, UK are not many. The NCERT had made a beginning a long time ago to put emphasis on Child education and rights, and at present, the DGS or Department of Gender Studies under NCERT, Delhi (<http://www.ncert.nic.in/departments/nie/dws/index.html>) has been concerned with this area to ensure that "Every child, irrespective of gender, is able to exercise right to quality education, facing the challenges of life at varied fronts and is empowered in the true sense of functionality, in order to be able to make informed choices and take action without being intimidated." However, it is still not a child-centric academic initiative.
- Considering the Constitutional approach, *Article 21 (a)* of the Indian Constitution made a provision that children between the ages of six to fourteen should be provided with free and compulsory education, whereas *Article 45* stated that the state should provide early childhood care and education to all children below the age of six. Lastly *Article 51(k)* states the parents/guardians of the children between the ages of six and fourteen should provide them with opportunities for education. *The Child Labour (Prohibition and Regulation) Act, 1986* covered children who did not complete fourteen years of age, and *the Factories Act, 1948* as well as *Plantation Labour Act 1951* stated that children below a certain age level must not be

² <http://www.gscpsdsd.in/>

³ <https://thewire.in/tag/centre-for-child-rights/>

⁴ <https://www.nls.ac.in/ccl/linktopyelback.html>

⁵ <https://www.qub.ac.uk/research-centres/CentreforChildrensRights/>



used for these purposes. The *Prohibition of Child Marriage Act, 2006* protected early marriages of male child below 21 and female below 18. Many other acts such as *Rights to Education (RTE)*⁶ or *Protection of Children from Sexual Offences (POCSO)* of 2012⁷ have been floated for better handling of the situation. Even though with each passing period, new issues keep propping up, such as children as victims of Cyber Crime⁸ about which iProbono and Karnica Seth of FIRE NGO had prepared a document.

- The NCPDR in India follows a rights-based perspective flowing into Government's national policies and programmes, along with nuanced responses at the State, District and Block levels. The idea is to consider the specificities and strengths of each region in India, so that there could be a deeper penetration to communities and households and so that the ground-level experiences could be gathered.
- In this context, it is noticed that the Kailash Satyarthi Children's Foundation (KSFC) stands out as a unique organization among all the efforts that have been mentioned above. It began with a vision to create, implement, and advocate child-friendly policies that ensure the holistic development and empowerment of children worldwide. The Foundation is based in New Delhi and Washington, D.C. Its three major areas of work are: Outreach & Engagement, Direct Action, and Policy & Training. The Foundation specializes in raising awareness, mobilize for direct action and provide training for which it has support from many strategic partners and leaders of the industry. The whole idea began with Kailash Satyarthi's *Bachpan Bachao Andolan* (Save the Childhood Movement) that liberated a truly large number of children from exploitations of various kinds.
- The internal discussants also pointed out that the idea of collaboration should be to pool our resources in centers of excellence in both public and private sectors in the country to take up collaborative research or publication activities in the area of Child Rights and Child Development. It was agreed that this could begin with an MoU between KSFC and AUH in the first place.
- It was decided to prepare a draft MoU by the AUH team, and shared with the KSFC office. This could be further elaborated, modified and finalized at a meeting possibly at the AUH campus at Pachgaon, and this would be how a beginning would be made. Subsequently, both AUH and KSFC would seek bilateral as well as multi-lateral funding for research grants from different funding agencies.
- On 9th October 2018, a follow-up meeting was held on AUH campus for which Dr Subhadra Menon, Director (Research), Kailash Satyarthi Children's Founda4tion came for an ini4tial discussion on our collabora4ve Programmes on Child Rights and Child Development under the Kailsah Satyarthi Centre for Child Rights and Development at AUH. She met to discuss the areas of collaboration on which inputs from the Law School were very valuable. There were elaborate meetings with both Pro-VC and VC separately.
- On 25th April 2019, a further follow-up meeting was held in the Kailash Satyarthi Foundation Office in which the following from KSFC participated: Mr. S.C. Sinha, Head Bachpan Bachao Andolan & Global Policy Ins4tute for Children; Former Member Na4onal Human Rights Commission; Former DG NIA & Special Director CBI; Ms Sutapa sanyal, former DG Police, UP; Mrs. Jyoti4 Mathur, Training & Capacity Building, Mr. Herman James Samuel – Joint Director Public Affairs; Mr Rohit Sharma. -Team Lead, KSFC, and several research staff. From AUH,

⁶ A set of activities that began with Universalization of Elementary Education from 2013 onwards, and Right of Children to Free and Compulsory Education Act, 2009 culminated in these provisions based on the CPR Act of 2005.

⁷ See <http://www.ncpcr.gov.in/showfile.php?lang=1&level=1&&sublinkid=1288&lid=1513> for details of 'An Easy Guide to The Protection of Children from Sexual Offences (POCSO), 2012'.

⁸ <http://www.ncpcr.gov.in/showfile.php?lang=1&level=1&&sublinkid=1298&lid=1519>



besides Prof U. N. Singh, Dr Rishi Pal and several other faculty from AIBAS and Law School attended. A draft policy paper was sent as an initial document for discussion.

4. Models of Academic Programmes Considered

4.1. The CPC Curriculum of FXB centre, Harvard

The Harvard François-Xavier Bagnoud (FXB) Center for Health and Human Rights offers an opportunity to Harvard graduate students to take a set of Certificate in Child Protection courses which are interdisciplinary in nature. The exchange with invited speakers, mentors and senior child protection practitioners is useful.

The programme focuses on the issues of prevention of child abuse, response to call for help in such instances, and resolution of abuse, neglect, exploitation, and violence experienced by children in both domestic and formal settings. It requires a multi-sectoral approach that draws from work in health, education, social service, public policy, psychology and law, involving a wide range of partners across different wings of the government and within civil society, communities, and families. Many of the courses have mandatory seminars, consisting of panels of child protection experts brought in specifically to talk to and meet with certificate candidates.

The Programme Outcome is such where the Certificate Recipients are better equipped to:

- Identify relevant social, economic, legal, and cultural issues affecting child protection,
- Build a stronger child protection evidence through a rigorous research, monitoring, evaluation, and use of data,
- Understand interactions at policy, community, family, and individual levels,
- Gain competencies in developing the necessary cross-sectoral partnerships, and
- Come up with a holistic child protection plan and system.

Completion of 12 credits selected from CPC course offerings in at least three of the curriculum's five domains is the requirement.

The curriculum has courses covering the following five domains of child protection:

A. CHILD PROTECTION SYSTEMS

- Law and Policy
- Systems Capacity and Integration
- Data/Statistics
- Birth Registration

B. VIOLENCE AGAINST CHILDREN

- Protection from Violence, Exploitation, Abuse, Neglect
- Protection in Emergencies
- Impact of Violence on Children



C. JUSTICE FOR CHILDREN

- Children in Conflict with the Law: Detention/Diversion
- Children in Contact with the Law: Family Court; Foster Care; Criminal Witness

D. SOCIAL CHANGE/ FAMILY STRENGTHENING

- Social Protection
- Social Inclusion/Non-Discrimination
- Cultural and Social Norms/Social Change

E. CHILD PROTECTION LEADERSHIP TOOLS

- Leadership
- Negotiation
- Advocacy

Ref: <https://fxb.harvard.edu/child-protection-curriculum/>

4.2. HREA Children's Rights and Child Protection Program

The Global Human Rights Education and Training Centre, xxx (HREA) has been offering a range of e-learning courses and training workshops on children's rights, child development, participation and protection since 2016. A new course on *Child Rights Budgeting* and *Child Rights Governance* was also thought about by them. Their priority has been in the following areas:

- child-friendly justice
- child protection
- child participation
- child-friendly schools
- education in emergencies

HREA, an international non-governmental and non-profit organization, works to ensure that children and youth across the globe are able to realize their human rights and that children's rights practitioners, development workers, social workers, youth workers, legal professionals, law enforcement and policy makers have the knowledge and skills they need to promote and protect children's human rights.

They begin with a Tutored E-Learning **Foundation Course on Children's Rights** (5 weeks) followed by an **Advanced Course on Child Rights Based Approaches** (10 weeks). In addition, they offer separate courses on-line on **Child Rights Public Budgeting** (2 weeks), **Child Rights Governance** (5 weeks), **Children in War and Armed Conflicts** (5 weeks), **Child Rights: Situation Analysis** (5 weeks) and **Child Participation** (6 weeks).

Ref: <http://www.hrea.org/programs/childrens-rights-and-child-protection/>



4.3. Queen's University Belfast Program

Queen's University will offer a Master's programme (M.Sc.) in Children's Rights from 2020 to meet the increasing demand for a postgraduate qualification in Children's Rights, explicitly focused on interdisciplinary research and child rights-based research methods. It will provide high-level knowledge and skills in children's rights law and practice of value to those working with and for children, including public officials and NGOs as well as educators, social workers and health care providers. There will be no written examinations. A variety of assessment methods will be used including assignments, online tests and participation in workshops. Students will have the option of undertaking research work for external organisations to submit as part of their dissertation.

The focus will be on two inter-connected areas:

- **Children's Rights** - using the United Nations Convention on the Rights of the Child and other relevant international standards to evaluate the laws, policies and practices which affect children
- **Research with Children** - evaluating the best methods of conducting research into children's lives with a particular focus on approaches which involve children actively in the research process.

They plan to provide extensive links with local and international NGOs that could provide some opportunities for students to undertake relevant research. This will enable them to gain experience in the children's sector, perhaps to secure a job or to change position. Their programme will be linked to the **Centre for Children's Rights** (CCR <http://www.qub.ac.uk/ccr>), an internationally reputed organization working on children's rights with a focus on the implementation of children's rights, child participation, education, social care and the children with disabilities. The CCR has a vibrant community of PhD students undertaking research in a range of issues and in several countries.

The **Six Core Modules** will be as follows:

An Introduction to Research Methods - 20 CATS

The aim of the module is to provide a general research overview and to contextualise the broad range of approaches and debates that are evident within contemporary educational research. The module aims to provide students with an understanding of the theory and an appreciation of the differing perspectives that underpin quantitative and qualitative methodologies. Students will be introduced to the ethical issues relating to educational research as well as a range of methodological approaches, within which the key theoretical and practical issues will be addressed.

Childhood and Youth Research in Practice - 10 CATS

This is an introductory module brings together students and academic staff from a range of areas to showcase research, highlighting different issues and looking at a variety of projects using both qualitative and quantitative methods. The module will conclude with a workshop on research ethics and governance.



Children's Rights in Research and Participation - 20 CATS

The module will introduce students to children's right to participation as enshrined in Article 12 of the United Nations Convention on the Rights of the Child. It will locate this right within the broader critical and theoretical discourse on children's participation and the perceived extent and limits of children's autonomy. The module will contextualise the right by drawing on children's right to participate in decision making processes in relation to, for example, policymaking, medical decisions, and research processes. It will also explore how effective the right to participation is for different groups of children such as young children, children with disabilities.

Foundations of Children's Rights - 20 CATS

This module will introduce students to international children's rights laws affecting children, with a particular focus on the United Nations Convention on the Rights of the Child. It will locate children's rights within the broader framework of human rights law and introduce the core provisions of international children's rights, emphasising the research skills used to identify and understand major human rights treaties and secondary documentation. It will explain the fundamental principles of children's rights and their implementation and introduce theory and ongoing debates in the field, such as the limits of children's autonomy and the potential tensions between children's rights and parents' rights.

Perspectives on Childhood and Youth - 10 CATS

This is an introductory module brings together students and academic staff from a range of areas to familiarise students with diverse disciplinary perspectives on children and young people. Indicative content includes: the sociology of childhood; youth studies; psychobiological approaches; children's rights; health approaches and interventions.

Dissertation – 60 CATS (20,000 words max.)

Optional Modules

A range of optional modules will enable the students to choose further research methods modules and a range of substantive children's rights modules including issues such as social work, disability, education and philosophical perspectives. For example, students can take modules on:

Youth and Social Justice - 20 CATS

Childhood Disability and Rights - 20 CATS

Qualitative Research in Childhood and Youth - 10 CATS

Economic Impact of Childhood Interventions - 10 CATS

In addition, students could choose modules from the School of Nursing and Midwifery and the School of Psychology.

Ref: <https://www.qub.ac.uk/courses/postgraduate-taught/childrens-rights-msc/>



4.4. University of Leiden Master's Programme – Advanced LLM

The University of Leiden in Holland offers an advanced LLM course on International Children's Rights, offering in-depth specialization on the rights and interests of children from a legal perspective. The programme is assessed "excellent" by the NVAO (the Accreditation Organisation of the Netherlands and Flanders). The programme provides an advanced study of the field of children's rights and pays particular attention to its intersections with diverse fields of law.

The program offers a multi-layered study (covering international, regional and national legal systems), as well as an interdisciplinary scope, to examine the most relevant issues impacting children worldwide. For instance, these questions will be important: What are the rights of the child when it comes to forced marriages or protection against violence or exploitation? Which rights do refugee children have in their host communities? How do we balance between the rights of children, parents and the state? And how can children's rights be legally enforced in various countries across the globe?

During this programme, the students will develop an understanding of the legal processes for making children's rights a reality across the globe. This Master of Laws programme with a focus on Advanced Studies in International Children's Rights provides in-depth specialisation and teaches you to respond to the increasing international, regional and national legal developments in relation to children. During the small-scale, English-language programme, you will address highly topical and global issues related to children and their human rights. You will also gain understanding on the theoretical, legal and practical approaches in exploring various fields, including:

- child and family
- migration
- juvenile justice
- digital technologies

As a part of this programme, the students will learn to:

- look at international children's rights from a comparative perspective
- explore the UN Convention on the Rights of the Child, as well as major regional legal instruments concerning the rights and status of children
- assess the impact of international children's rights on domestic jurisdiction
- address the most significant challenges with regard to children's rights implementation, and identify emerging issues impacting children worldwide
- analyse the complex roles of the different actors (children, parents, state and non-state actors), and their interrelation in various legal contexts
- critically reflect on the potential and limitations of international and regional standards for the legal protection of children
- develop research, presentation and academic writing skills

Year 1

EC Semester 1 Semester 2

Semester I

[Interaction Between Children's Rights And Other International Legal Systems](#)



Course information

This course engages in children's rights as part of international human rights law, including the historical development of children's rights, the position of the UN Convention on the Rights of the Child (CRC) in relation to other UN human rights instruments and the relation between the CRC and regional human rights instruments such as the European Convention on Human Rights, the African Charter on the Rights and the Welfare of the Child and the American Convention on Human Rights. In addition, it provides students with thorough knowledge and understanding of the position of children's rights in other areas of international law, including human rights law, international labour law, international humanitarian law and international criminal law. Particular attention will be devoted to the added value of other legal instruments compared to the CRC as well as to the role of international institutions for the interpretation and implementation of children's rights, including, inter alia, treaty bodies, human rights courts, international criminal courts or UN institutions.

Course objectives

After this course the student will be able to:

- scrutinize the main features of the UN and regional human rights systems, including the ways in which different human rights protection mechanisms co-exist, overlap and may influence each other;
- assess the development of international children's rights , its main features and 'added value';
- assess the different workings of different human and children's rights protection mechanisms at the UN and regional level, and its interaction with domestic protection mechanisms;
- assess the strengths and weaknesses of the various UN and regional protection mechanisms for children within their political, social and legal setting.

Mode of instruction

10 weeks of lectures and seminars of two hours each 2 Field trips to UNICEF and the International Criminal Court

Examination method

Written exam: 60%

Written assignment: 20%

Oral presentation: 20%



The final grade for the course is established by determining the weighted average.

It will be up to the discretion of the relevant lecturer/examiner to decide on the form of the retake. The retake may consist of a written retake exam, oral retake exam or any other kind of assessment that is deemed appropriate.

Blackboard

The course manual, including the reading list, will be published on Blackboard.

Submission of written assignments via Blackboard using SafeAssign.

Course materials

The reading materials will be available via the online catalogue or as a paper copy in the Leiden law Library. The availability (either online or as a paper version) of each of the materials will be indicated via Blackboard at least one week prior to the scheduled lecture. In addition, you are advised to use the Handbook on European law relating to the rights of the child, which will be given to you, free of charge, on your first day.

Children In The Justice System	5
Child And Family In Private International Law	5
Economic, Social And Cultural Rights Of Children	5
Semester II	
Child Protection And Children's Rights	5
Migration And Children's Rights	5
Children's Rights And Digital Technologies	5
Thesis International Children's Rights	10
Enforcement And Monitoring of Children's Rights	

REFERENCES:

Ref: <https://www.universiteitleiden.nl/en/education/study-programmes/master/international-childrens-rights>



5. AUH Programmes & MoUs

5.1. An MoU was signed between KSFC and AUH on **6.8.2019** under which this centre of excellence at AUH was expected to undertake the following tasks:

- A. Initiation of Child Rights/Child Protection academic programmes as may be mutually agreed.
- B. To support data driven decision making and assist in formulation and implementation of policy related to child rights and protection by state and non-state actors.
- C. Training and capacity-building of various stakeholders like law enforcement agencies; civil society, corporates etc. about laws, provisions and other aspects that uphold the rights of children.
- D. Training and sensitization of parents about the rights of children inculcating effective and responsible parenting.
- E. Supporting communications and activities on public and social platforms to uphold the rights of the child.
- F. Special R&D Projects that may be mutually decided and agreed upon between the parties from time to time.

5.2. The following Courses and Academic Initiatives were agreed upon:

- The Kailash Satyarthi Centre for Child Rights (KS-CCR), AUH will offer academic curricula starting with Elective Courses on Child Rights/ Child Protection. All the academic degree programmes as mentioned above will begin after the Government of Haryana Higher Education Council approves the same.
- A Minor Programme/ Open Elective (under Flexi Credit System) on Child Rights/ Child Protection.
- Short-term courses and funded full-time Ph.D programmes for eligible doctoral students from various disciplinary backgrounds as well as part time Ph.D programs for those already employed as volunteers/fellows/consultants (by whatever designation known, but investing at least 20 hours per week in the organization) at KSCF would be offered for those who meet the eligibility criteria for admission into PhD programme as per AUH rules and other terms and conditions at AUH.
- KS-CCR, AUH may eventually offer full time Bachelors and Master's diploma/ degree courses
- Executive development workshops on Child Rights for working professionals
- Faculty Development Programmes (FDPs) and Management Development Programs (MDPs)
- KS-CCR will initially design a full-fledged 6 paper Minor Course "on campus" at the Bachelor's level – both face-to-face and as a "distance education" programme.
- Besides these theory-based courses, all students under the purview of KS-CCR will get a holistic practical exposure to various aspects of Prevention, Protection, Rescue, Restoration and Rehabilitation of children.
- KS-CCR will design Ph.D. in the area of Child Rights / Child Protection. Initially KSCF may consider offering 2-3 fellowships ranging from Rs. 25,000 to Rs. 50,000 per month to deserving candidates (based on a set of criteria to be decided mutually). The Amity University Haryana will also support the deserving students. KSFC will also offer paid internships for UG and PG students of AUH in various organizations of the Satyarthi Movement.

5.3. Other Courses / Programmes to be offered:

- Three-week Refresher Courses on Research Methodology in Child Rights/Child Protection Area.
- Short-term Workshops on Human Values (for Faculty/Students/Dedicated External Groups)
- Child Development Programme (Both on or off-campus) and Special Education Program.



- Executive Development Programme for educational institutions/companies/organizations) – focusing on Crisis Management with respect to Violence against Children.
- Public Debates (also to be a part of Amity TV) on Child Rights/ Child Protection Issues.
- Orientation Lectures for fresh university students to make them sensitive to issues on Child Rights/ Child Protection.
- An on-line (Non-Degree) Programme (Distance Education) on Child Rights & Child Protection.
- Virtual classes can also be introduced at a later stage.

5.4. Umbrella MoU

Further, after several rounds of discussions involving the Chancellor, AUH and Chair-person, KSFC, an Umbrella MoU was signed between Kailash Satyarthi Children's Foundation and all Amity Universities and Institutions with the similar objectives as above but spread in all organizations under the RBEF, or Amity Group of Institutions. It was agreed that the currently existing faculty from Law, Psychology, Political Science, Anthropology, Sociolinguistics and Social Work across Amity campuses will be drawn into for designing and administering the courses.

It was also agreed that

- AMITY UNIVERSITIES & INSTITUTIONS will make provisions for Regular, Visiting and Adjunct Faculty in the relevant campuses as may be required
- KSFC will also contribute towards visiting faculty at KS-CCR, AMITY UNIVERSITIES & INSTITUTIONS

It was also agreed that the academic and outreach activities under this MoU will be guided by a **Programme Advisory Committee (PAC)** consisting of at least five members from the Amity Universities and three to five from the KSFC to be decided by the respective parties.

Accordingly, a Curriculum Development Committee started functioning at AUH to start with. This Committee had had several rounds of face to face and virtual meetings.

A few other interesting decisions were also arrived at, such as follows:

- Under 24x7 activities at the Amity University Campuses, a '**student club**' will be opened under the aegis of Dean (Student Welfare), focusing on Child Rights/ Child Protection which will be involved in various cultural activities related to the same (street plays/ dumb charades etc. on the subject for sensitization and awareness generation).
- Hold frequent workshop-cum-discussions involving artists, media personnel, cartoonists, authors, activists and thinkers to highlight child-centric issues.
- Establish "Scholar-in-Residence" or "Writer-in-Residence" programmes focusing on the subject of Child Rights and Child Protection.

It was also decided that KS-CCR will assist KSFC in drafting the policy documents. Sustained discussions and engagement with relevant stakeholders may be jointly carried out for bringing about legislative changes for upholding the rights of children. Special consultations/ workshops for the purposes of the policy advocacy can be done for which funds will be raised jointly. Joint bidding /funding will be arranged for evidence-based research on subjects related to freedom, safety, health, education etc. of children to support data driven decision making and assisting in formulation and implementation of policy related to child rights and protection by state and non-state actors. Publishing and publicizing research outcomes for maximum impact will be undertaken. AMITY TV will also play an important role



in doing this. The KSCF will share with AMITY UNIVERSITIES & INSTITUTIONS, its data related to trafficked children, rescued and rehabilitated children; advances made in the use of technology for identifying missing children, research on how to create and sustain child-safety cities and urban areas, etc. for further prospective research.

It was also agreed that a project for the standardization of psychological tests for children will be rolled out with the help of Amity Institute of Behavioral & Allied Sciences (AIBAS), AMITY UNIVERSITIES & INSTITUTIONS. These tests would be used to profile rescued children on the basis of behavioral traits, personality, aggression etc. Rehabilitative models for each of these personality types will also be designed. This will institutionalize child rehabilitation, making their reintegration to mainstream society more systematic.

The Amity universities will undertake training and capacity- building of stakeholders in Child Protection at its campus. Specialized short-term courses in parenting will be designed for new parents and guardians.

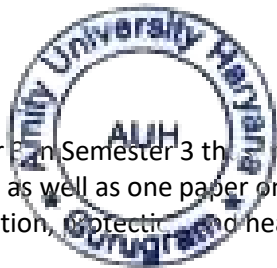
6. Curriculum Development in progress

Two face-to-face meetings and several rounds of electronic exchanges were held in December 2019 and early months in 2020 before the lockdown period. The discussions began with suggested course names and themes in Semester 1 where focus was to include all aspects of a child's life including personal, social, and psychological aspects. A tentative list was prepared which was to be modified during discussions between members of AUH and KSCF. KSCF team flagged the need to highlight certain pertinent themes in Semester 1 that included- History and evolution of Child rights (the role played by Mr. Satyarthi and viewing the developments in the field of child protection within the wider ambit of the movement)

The Amity team pressed upon the need to include a separate paper of a certain number of credits for fieldwork, as a result, fieldwork and internship were added in the list of courses separately. The KSCF team highlighted that Compassion is an essential part of Shri. Kailash Satyarthi's work in the domain of Child rights in India and the world. The manner in which Compassion or lack of compassion is linked with protection of children was discussed. Thereafter, it was decided that a course on the philosophy of Compassion and its linkages with children will be included in the first semester.

The Amity team was of the opinion that other ethics and soft skills also be included in the course on compassion. Amity Team mentioned that one paper on Special children and their needs be included in the list of courses as they deserved a special space in the coursework. The CEO, KSFC summarized the key points highlighted by KSCF and proposed to have an elective course especially on children in conflict zone, migrant children, children suffering from trauma due to parental neglect, and children who are victims of sexual and mental abuse. For courses in Semester 2, the idea was to cover specific problems and issues relating to children as well as cover the solutions and interventions to address them. For Semester 2, it was decided that one paper should cover all violations of child rights like trafficking, child sexual abuse, child labour, child marriage, online crimes against children and so on.

As the UNCRC and other conventions on child rights would be covered in semester 1 in the course on History and Evolution of Child Rights Movement, the next step was to include specific laws and



policies on children. Paper 2 and Paper 3 in Semester 3 that will cover policies and legal framework relating to children in India as well as one paper on other possible solutions and interventions to address gaps in education, protection and health of children.

The tentative course structure and other details related to Certificate, and Diploma (Semester 1 and 2) and Workshops were discussed. The modified list is provided below:

Semester 1

Certificate Course:

1. History of child rights Movement: National and International perspectives
1. Psycho--social aspects of CR
3. Compassion, Ethics and other skills
4. Fieldwork and Action Research
5. Internship/ Term Paper

Elective (Rough Framework)

1. Psycho social and therapeutic interventions
2. One paper on Special Children and their needs
3. One paper on Vulnerable Children & Children with Special Needs
4. Child Education and Law

Electives (Rough Framework)

1. New and emerging On-line crimes against children
2. Behavioral Change
3. Gender and Children
4. Adolescents, Drug Addiction and Child Development
5. Children in Conflict zones and migration

Semester 2

Suggested Tittles:

1. Violations of Child rights: assessing the ground reality
2. Methods and Techniques of Interventions
3. National Policies related to Children

The team sat and discussed the timelines and key activities for hosting the Symposium tentatively in the month of March, 2020.

7. The Decisions on Courses

After the 15th November 2019 and 5th December 2019 meetings, during the follow up exchanges, it was agreed that the following courses would be offered through this Centre of Excellence:

- (i) **A One-Year (Two Semester) Diploma - both Face-to-face and On-Line, in the area of Child Rights and Well-being,**
- (ii) **A Certificate (One-Semester) in the above lines,**
- (iii) **A Campus-wide Compulsory 72-hours contact or workshop programme spread over two semesters meant to sensitize all students - in the pattern of Behavioral Sciences or Communication Workshops at All Amity Universities,**
- (iv) **A 6-paper 15-to-18 Credit Minor Programme on Child Rights and Development at the UG level,**
- (v) **LLM in Child Rights, in the pattern of University of Leiden.**
- (vi) **Ph.D. Programme design in Child Rights and Development**



In what follows, the programme structure of each of the above is presented:

7.1. DIPLOMA IN CHILD RIGHTS & WELL BEING/ CERTIFICATE PROGRAMME

7.1.1. Certificate (One Semester):

01. ISSUES IN CHILD RIGHTS – SOCIAL, FAMILIAL, INTER-PERSONAL & ATTITUDINAL
02. CHILD BEHAVIOR & DEVELOPMENT
03. HUMAN RIGHTS AND CHILD RIGHTS
04. CHILD PROTECTION & LEGAL PROVISIONS

Tutorial: Field Studies and Term paper

7.1.2. Diploma (Two Semesters):

Semester 1

01. ISSUES IN CHILD RIGHTS – SOCIAL, FAMILIAL, INTER-PERSONAL & ATTITUDINAL
02. CHILD BEHAVIOR & DEVELOPMENT
03. HUMAN RIGHTS AND CHILD RIGHTS
04. CHILD PROTECTION & LEGAL PROVISIONS

Tutorial: Field Studies and Term paper

Semester 2

05. CHILD RIGHTS IN INDIA: CURRENT SITUATION
06. INTERNATIONAL CONVENTIONS ON CHILD RIGHTS
07. METHODS & TECHNIQUES OF INTERVENTION
08. CHILD WELFARE ISSUES & MASS MEDIA

Tutorial: Field Studies and Term paper

7.2. CHILD RIGHTS & PROTECTION (Compulsory Workshops 72 hours/Two semesters) Workshops will focus on the following modules:

- (i) Understanding Childhood (Sem 1: 8 hrs; Sem 3: 8 hrs)
- (ii) Vulnerability of Children – Case Studies (Sem 1: 8 hrs; Sem 3: 8 hrs)
- (iii) Social Policies for Children (Sem 1: 6 hrs; Sem 3: 6 hrs)
- (iv) Child Rights as a part of Human Rights (Sem 1: 4 hrs; Sem 3: 4 hrs)
- (v) POCSO – Provisions and Justifications (Sem 1: 6 hrs; Sem 3: 4 hrs)
- (vi) Spreading the Message: Save the Childhood (Sem 1: 4 hrs; Sem 3: 4 hrs)

7.3. Open Elective in Child Rights & Development (UG Level)

Semester 1	Introduction to Childhood and Child Behavior - I
Semester 2	Introduction to Childhood and Child Behavior - II
Semester 3	Violence Against Children - Cases
Semester 4	Civil Laws and the Child Rights
Semester 5	Criminal Procedure and Children
Semester 6	National & State policies for Child Development



7.4. LLM WITH A FOCUS ON CHILD RIGHTS

FIRST SEMESTER

Course Code	Course Title	Lectures (L)(Hours per week)	Tutorials (T) (Hours per week)	Practical (P) (Credits)	Total Credits
LAW4111	Introduction to Child & Youth Care	1	1	2	3
LAW4112	History of Children's Rights In the context of Human Rights	1	1	2	3
Choose any One Stream					
International Child Rights Law Specialisation)					6
LAW4113	CRC: UN Convention on The Rights of the Child	1	-	2	2
LAW4114	Juvenile Justice: From Global Commitments to Local Settings	1	-	2	2
LAW4115	Legal Drafting & Writing: Term paper	1	-	2	2
Child Rights in India (Specialisation)					6
LAW4116	International Standards & Monitoring System in India	1	-	2	2
LAW4117	Diverse Ideologies & Social Anthropology of Childhood	1	-	2	2
LAW4118	Legal Drafting & Writing: Term Paper	1	-	2	2
TOTAL					12

LAW 4111: Introduction to Child and Youth care and Allied Disciplines

Child & Youth Care is a rapidly growing field of study and an academic discipline globally. As a professional practice, child and youth care is embedded in all child and youth serving sectors, including mental health, child protection, youth justice, developmental services, homeless and street-involved youth, education, hospitals, immigration and settlement, and many others. The professional and academic infrastructure of the field includes professional associations working in the field, at the provincial and national levels, academic journals and professional magazines, an educational accreditation process and in training and research programmes.

LAW 4112: History of Children's Rights in the Context of Human Rights

This module provides an overview of the evolution of children's rights before the adoption of the United Nations Convention on the Rights of the Child. Based on a chronological



approach, it is a comprehensive social and cultural history of children's rights, of the way they developed over the course of the last centuries. While not building on a strict history of diplomatic relations, this module provides an international perspective on this evolution. It aims to underline the multiplicity of actors, networks and organizations involved in the defense and promotion of children's rights, over time. Also, it emphasizes crucial moments of this history, such as the adoption of international legal instruments on the rights of the child, the two World Wars, etc. This module will nonetheless challenge common understandings of the history of children's rights. For instance, instead of describing it as a linear success story, it will highlight progress as well as failures. Also, the idea that the rights of the child are a 20th Century invention will be balanced. By doing so, we aim to provide a complex understanding of the history of children's rights and detailed contexts for the topics they cover (e.g. child labor, juvenile justice, etc.) and that will be studied later in this MOOC

LAW 4113: The UN Convention on the Rights of the Child (CRC)

Drawing on the contributions of several academic disciplines including law, psychology, sociology, history, educational and health sciences, economy and anthropology, an interdisciplinary approach guides the student into a selection of critical issues concerning children's rights. Participants will gain insight relative to the development of this specific human rights category, as well as to the evolution of the challenges faced by children over time and society's efforts to respond. Successful international strategies and programs promoting children's rights will be highlighted, as well as the role of key actors involved in international organizations working in this field. This open online course provides an overview of the most important features of children's human rights. A central portion of the MOOC will consist of a presentation of the international and regional standards on children's rights and the related international and regional judicial and quasi-judicial bodies designed to ensure their implementation. No prerequisites or specific background is required to register for this MOOC. The course is conceived as an introductory level program, but participants, who wish to deepen their knowledge in the field of children's rights, or already have some prior knowledge, will have access to additional reading material on a weekly basis. Participants who successfully complete the class activities and final assessment may request for a paid certificate of accomplishment signed by the Instructor and the main professors responsible for the program. However, no credits are awarded. The course consists of seven topical modules distributed on 4 weeks. English is the only language of instruction.

LAW 4114: Juvenile Justice: From Global Commitments to Local Settings

The field of Juvenile Justice (JJ) or of systems of Justice specialized for children in conflict with the law, is the field of children's rights where the international community has drafted the largest amount of legislation (national, regional and international). It is obviously a very sensitive field where child rights violations are numerous, where violence in institutions must be deplored, and where the response is not always child-friendly, and does not systematically favor individual child development. It is moreover a domain where the State exerts its power in response to child offenses, very often through the deprivation of liberty ; and where the State's interference also represses non-criminal behavior (running away, breaking disciplinary rules, breaking curfews, ...), all of these actions would not be legally reprehensible if committed by an adult (status offence). And, alas this field of JJ sometimes accounts for violations of children's rights at the hands of States themselves: in the arrest phase, in administrative detention, in the execution of judiciary sentences, but also in institutional care. The issue of JJ also includes children victims and witnesses.



LAW 4115: International Standards and Monitoring System in India

The module begins with the presentation of the background, origins and main content of the UN Convention on the Rights of the Child (CRC), and provides details about the preparatory work and the international political context in which the Convention was drafted. The content of international human rights norms are discussed using the subdivision between civil and political rights on the one hand, and economic, social and cultural rights on the other. Furthermore, the general UN human rights monitoring mechanisms will be introduced, followed by the presentation of the CRC monitoring system. A discussion on the importance of regional human rights monitoring systems for children in Africa, Asia and Latin America will be the subject of a specific round table. Within the monitoring framework a particular attention is dedicated to role of key actors: Independent National Human Rights Institutions (INHRI) on Children's rights, Non-Governmental organizations (NGOs) and children. The special focus will be exploration of Meaning and Implications for the position of children at the international and domestic levels.

LAW 4116: Diverse ideologies & Social Anthropology of Childhood

The module will provide a general introduction to the field of children's rights studies. It will emphasize the interdisciplinary outlook of the field and will present schools of thought in children's rights. Furthermore, we will show the links between children's rights and the sociology and anthropology of childhood and provide some examples of recent children's rights research and practice.

SECOND SEMESTER

Course Code	Course Title	Lectures (L)(Hours per week)	Tutorials (T) (Hours per week)	Practical (P) (Credits)	Total Credits
LAW4211	Family Law, Child Care & Protection: An Ecological Framework	1	1	2	3
LAW4221	Dissertation	-	-	6	3
Choose any One Stream (Same as in Semester-I)					
Civil and Criminal Law (Specialisation)					6
LAW4212	Legal Awareness: CR & Civil, Criminal & Admin Laws	1	-	2	2
LAW4213	Education & Child Rights	1	-	2	2
LAW4215	Lifespaces as an area of therapeutic intervention	1	-	2	2
Child Rights & Activism (Specialisation)					6
LAW4216	Social Innovation in Child Care Practices	1	-	2	2
LAW4217	Critical Practices & Ethical Approaches	1	-	2	2
LAW4218	Dissertation	1	-	2	2
TOTAL					12



LAW 4211: Family Law, Child care and Protection: An Ecological Framework

When children are at risk or subject to abuse or neglect in their homes, they may need services such as protection, shelter, or treatment provided by a state's protective services agency. In addition, parents may be unable to provide appropriate interventions to meet a child's needs. In these situations, judges are generally required to appoint counsel to represent a child's interest in a proceeding designed to decide whether to remove a child from their home. Attorneys exercise a vital role by counseling their client, the child, regarding options available to them. These options may include foster care, treatment programs, ongoing counseling, or group home placement. Without effective representation, children may be removed from their homes or continue to reside in an unsafe home; moved into inappropriate programs; forced to cycle from placement to placement; or denied needed services

LAW 4202: Legal Awareness: CR & Civil, Criminal and Administrative laws

Children's rights law involves dealing with potentially difficult ethical issues of representation. For a proper understanding of these issues, one needs to have the legal awareness. Representing a child may pose different challenges, and offer a different type of satisfaction, than representation of an adult client. Attorneys who represent a child must understand family dynamics and child development. They must also be sensitive to the implication of fundamental principles and values which may conflict such as a child's right to protection vs. a parent's right to raise his or her child. Children's rights law is all of the above and more.

LAW 4213: Education and Child Rights

Advocacy on behalf of children occurs frequently in the context of education. With the increasing emphasis placed on education through testing of students for promotion and graduation as well as issues relating to violence in schools, education has increasingly assumed the spotlight in today's society. Hence, legal issues arise more frequently. For example, children's rights are involved in issues of bilingual education, special education, education reform, or school discipline. In bilingual education, systemic issues such as access to education, nondiscriminatory testing, and tracking may arise. Work in the bilingual education context may, therefore, focus on systemic monitoring of school districts, compliance with existing federal and state statutes, or legislative initiatives. Research, coalition building, and lobbying skills are important in bilingual education. In special education, implementation of federal and state special education statutes arise in the context of individual cases. Consequently, attorneys work with individual clients and use negotiation and litigation skills in attempting to secure appropriate educational services. These highly emotional cases require an understanding of the myriad legal requirements as well as educational methodologies and an ability to mediate successfully. In addition, class action and legislative activity is common in the special education arena. Attorneys may also work in firms that advise and provide representation to school districts on special education issues. Education reform requires systemic initiatives and policy work. It involves policy development and implementation at the local, state, and federal level. Statewide testing, curriculum revision, and teacher certification requirements are examples of education reform work. Consequently, attorneys generally work in government agencies or in the legislature. Finally, student discipline requires representation in school suspension and expulsion cases. With the increasing focus on school violence, many students face



suspension and expulsion each year. Suspension and expulsion are tied directly to due process, and attorneys play a vital role in insuring that appropriate notices are issued and hearing procedures are followed, and decisions are rendered based on accurate information. Work in this area will, therefore, involve individual case advice and representation as well as legislative work to address system-wide issues.

LAW 4213: 'Lifespace' as an arena for therapeutic intervention

There are many areas that are conventionally overlooked by those who are to provide legal services for /to children. For instance, children may require legal representation to insure that appropriate medical decisions are made on a child's behalf. For example, if a child requires highly invasive medical interventions, state law may require judicial review of the decision. In addition, children with mental health disabilities may be the subject of involuntary commitment proceedings for treatment. In each of these cases, judges appoint counsel for children to ensure that their individual interests are protected. In addition, access to health care and government benefits such as social security disability may require the assistance of counsel to gain access to services. As a result, attorneys may represent children in government benefits hearings, or they may lobby legislatively to assure continuation or enhancement of benefits. Medical-Legal Partnership for Children in each environment has to be improved through legal advocacy and policy reform. One should employ a preventative, multidisciplinary approach to improving child health by ensuring that families' basic needs are met—safe housing, nutrition, income supports, access to health care, freedom from violence and appropriate education. This medical-legal collaborative has three primary components: education and training of health care providers on the laws governing children's basic needs; direct legal assistance and representation of children; and multidisciplinary policy advocacy on behalf of children and their families. The program focuses on children whose health or welfare will be demonstrably improved through legal intervention

LAW4216: Social Innovation in Child and Youth Care Practice

LAW 4217: Critical Practices and Ethical Approaches

LAW 4218: Dissertation

7.5. PH.D. IN CHILD RIGHTS & DEVELOPMENT

Under development.



CENTRE for BRICS STUDIES
(Centre of Excellence)
Amity Business School
Amity University Haryana
Gurugram, INDIA

Genesis and Strategic Significance:

In the ambit of evolving new world order BRICS community has created a special status because it consists of some of the very powerful fast-moving emerging economies that enormously impacted global economic growth and power balance. The strategic and growing partnership among BRICS – Brazil, Russia, India, China and South Africa – has virtually transformed landscape of global geopolitics. Contemporary multilateral diplomacy has now realized that BRICS politico-economic grouping has become an impeccable powerhouse accounting for around 46% of world population, 25% landmass and more than 25% of global GDP. The great significance of BRICS with regard to various metrics such as natural, human and intellectual capital, and technological capital is recognized in various world political and economic forums while addressing pressing global issues ranging from environment safeguard measures, energy security, cyber security, terrorism, poverty alleviation, health issues, employment, science and technology including information and communication technology and other strategic issues in developmental process has become center of attention of international community including the traditionally dominating western powers.

In recognition of the strategic significance of BRICS in global politico-economic architecture the Centre for BRICS Studies was inaugurated on February 10, 2011 at Amity University Gurgaon by Dr. Aseem Chauhan, Honorable Chancellor of Amity University Haryana. Since then the Centre, under the stewardship of Dr. Padmakali Banerjee, Honorable Pro Vice-Chancellor, Amity University Haryana has evolved into a Centre of Excellence in its practice-research-outreach endeavor. The Centre focuses on high-end research, creation and dissemination of knowledge and information on BRICS, analysis of politico-economic cooperation among BRICS, deliberation on public policy matters, and enhancement of people-to-people contact. While keeping track of the latest happenings in BRICS including various Summit meetings, the Centre for BRICS Studies has been at the forefront in organizing seminars, conferences, expert lectures, panel discussions, and college competitions, international publications. Renowned academicians, senior diplomats and industry professionals have been visiting the Centre in its various programs and events. All these endeavors are aimed at promoting the spirit of practice, research, and outreach with special focus on excelling student academic and extra-curricular performance-based outcome while enhancing academia-industry integration. From time to time students have submitted research articles on issues related to BRICS economies, which have been sent to journal for review and publication. The Centre for BRICS Studies is also offering Doctoral program on BRICS issues in collaboration with Amity Business School (ABS), apart from existing courses in MBA program in International Business stream at ABS, Amity University Haryana. The Centre for BRICS Studies also publishes biannual BRICS Magazine that has become a popular reading in academic, diplomatic and industry domains. All these initiatives taken up the Centre for BRICS Studies for the purpose of enhancement and dissemination of knowledge and information about BRICS countries.



Goals:

- ❖ To promote high-end research, creating and disseminating knowledge and information on BRICS along three levels stated below:
 - Analysis of political and economic processes within BRICS countries;
 - Comparative analysis of development among BRICS countries;
 - Analysis of initiatives/programs taken up by BRICS countries in the wider domain of international diplomacy and geopolitics.
- ❖ To analyze the cooperative agenda of BRICS as an emerging politico-economic bloc and contribute to the debate on public policy through the following initiatives:
 - Promotion of public debate on BRICS-related issues;
 - Publicizing the socio-politico-cultural agenda of BRICS community to raise public opinion on their achievements;
 - Tracking the evolution and dynamics of BRICS cooperation over the years;
 - Disseminating information about the initiatives of the Centre for BRICS Studies to larger audience across academia and industry.
- ❖ To encourage actions aiming at fostering cooperation and information exchange among research institutions and think tanks within BRICS countries in following spheres:
 - International exchange program for students and researchers interested in BRICS studies;
 - Seeking for consensual agendas among researchers and professionals across research institutions, think tanks, academia and industry in BRICS countries.

Major Public Events organized by “Centre for BRICS Studies” at Amity University Haryana:

- Two members of the Centre for BRICS Studies - Prof. Gaurav Singh Arora and Prof. Ashok Tiku represented the Centre for BRICS Studies at the “BRICS Seminar on Skills for Manufacturing 4.0” organized by the Federation of Indian Chamber and Commerce (FICCI) on September 16, 2016.
- The Centre for BRICS Studies organized a seminar on “Manufacturing Sector & Skill Development in BRICS Countries” at Amity University Gurgaon Campus on November 17, 2016. Distinguished guests at the event were Ms. Purnima Anand, President-BRICS International Forum and Director, Foreign Policy Research Institute, New Delhi; and Mr. Amarnath Ghosh Dastidar, Consultant – International Business.
- The inaugural Newsletter of the Centre was launched in January 2017.
- On January 25, 2017 at the invitation of the Centre for BRICS Studies and Amity School of Languages a nine member Russian delegation from Russian State University for Humanities (RSUH) visited Amity University Haryana. The Russian delegation consisted of Prof. Alexander Stalyarov, Director of International Centre for South Asian Studies, Dr. Lev Tetlin, Institute of Philosophy, Russian Academy of Science. The Russian delegation talked about “Peculiarities of Russian & Hindi as foreign languages in Multicultural Environment.”
- The Centre for BRICS Studies organized a seminar on “Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations” at Amity University Gurgaon Campus on March 03, 2017. Distinguished experts at the event were Ambassador H.H.S Viswanathan, former Ambassador of India to Nigeria and Consulate General at the Consulate office in San Francisco, USA and currently Distinguished



Fellow at the Observer Research Foundation (ORF), New Delhi; and Ambassador J.K. Tripathi, former Ambassador of India to Brazil.

- The Centre for BRICS Studies and Amity Business School of Languages in collaboration with RSUH (Moscow), Russian Centre for Science and Culture (New Delhi) and Embassy of Russian Federation (India) organized a lecture on India-Russia relationship since last 70 years on April 25, 2017 at Amity University Gurgaon. The speaker at the event was Prof. Alexander Stalyarov, Director of International Centre for South Asian Studies.
- The Centre for BRICS Studies and Amity School of Languages at Amity University Gurgaon and Russian State University of Humanities (RSUH) signed Memorandum of Understanding (MOU) for the purpose of development of mutual academic cooperation between the two higher educational institutions.
- The Second Issue of Newsletter of the Centre was released on September 28, 2017.
- The Centre for BRICS Studies, Amity University Haryana in association with the Faculty of Management Studies of Amity University Haryana organized an Expert Talk and Panel Discussion on “A Futuristic View on Technology, Nature of Work and Jobs” on March 6th 2018. The eminent speakers on the panel included Ms. Poonam Barua, Founder Chairman – Forum for Women in Leadership & CEO, Will Forum India; Mr. Anilesh Mahajan, Senior Associate Editor, India Today Group; Mr. Saurabh Agarwal, Founder & MD, Skillcube and Mr. Arihant Garg, Director, KPMG.
- The Third Issue of Newsletter of the Centre was released on March 20, 2018.
- The Fourth Issue of Newsletter of the Centre was released on September 28, 2018.
- Prof. (Dr.) Debasis Bhattacharya, Professor at Amity Business School, Amity University Haryana and Member – Centre for BRICS Studies was invited to deliver a UGC funded public lecture at Jamia Milia Islamia University, New Delhi on November 22, 2018. The topic of the public lecture was “GST and Its Implications on Indian Political and Economic Landscape”.
- Dr. Meenal Sharma, Associate Professor at Amity Business School, Amity University Haryana and Member – Centre for BRICS Studies was invited as a resource person to deliver lecture in workshop on “Research Methodology and Data Analysis using STATA” held on January 20, 2019 at Haryana Bhawan, New Delhi.
- The Centre for BRICS Studies, Amity Business School organized a seminar on “BRICS & Changing world: Opportunities & Challenges” at Amity University Gurgaon Campus on February 26, 2019. Eminent speakers at the Seminar included Mr. Gustavo Westmann, Head Economic and Commercial office of Brazilian Embassy; and Mr. Anil Swarup, Author and Former Secretary School Education & Ministry of Coal, Government of India.
- The Fifth Issue of Newsletter of the Centre was released on February 26, 2019.
- Prof. (Dr.) Debasis Bhattacharya, Professor at Amity Business School, Amity University Haryana and Member – Centre for BRICS Studies represented Amity University Haryana and Centre for BRICS Studies at the 8th International Conference on Business and Economic Development in New York, USA on April 8-9, 2019.
- The Sixth Issue of Newsletter of the Centre was released on September 28, 2019.
- The Centre for BRICS Studies, Amity Business School organized a seminar on “BRICS Opportunities & Challenges: Perspectives on the 11th BRICS Summit” at Amity University Haryana Campus on March 04, 2020. The distinguished guest was Dr. Anoop Kumar Mittal, Chairman, BRICS Chamber of Commerce and Industry.
- The Seventh Issue of the Centre’s Magazine was released online in July 2020. This edition of the Centre for BRICS Studies Magazine highlighted the emerging geopolitical,



geo-economic and socio-cultural challenges that BRICS community has been experiencing in the wake of COVID-19 global pandemic.



**Centre for BRICS Studies Biannual Magazine – Vol. 7, June 2020
(Latest Centre Magazine Publication)**



CENTRE for BRICS STUDIES
(Centre of Excellence)
Amity Business School
Amity University Haryana, Gurugram, INDIA

Genesis and Strategic Significance:

In the ambit of evolving new world order BRICS community has created a special status because it consists of some of the very powerful fast-moving emerging economies that enormously impacted global economic growth and power balance. The strategic and growing partnership among BRICS – Brazil, Russia, India, China and South Africa – has virtually transformed landscape of global geopolitics. Contemporary multilateral diplomacy has now realized that BRICS politico-economic grouping has become an impeccable powerhouse accounting for around 46% of world population, 25% landmass and more than 25% of global GDP. The great significance of BRICS with regard to various metrics such as natural, human and intellectual capital, and technological capital is recognized in various world political and economic forums while addressing pressing global issues ranging from environment safeguard measures, energy security, cyber security, terrorism, poverty alleviation, health issues, employment, science and technology including information and communication technology and other strategic issues in developmental process has become center of attention of international community including the traditionally dominating western powers.

In recognition of the strategic significance of BRICS in global politico-economic architecture the Centre for BRICS Studies was inaugurated on February 10, 2011 at Amity University Gurgaon by Dr. Aseem Chauhan, Honorable Chancellor of Amity University Haryana. Since then the Centre, under the stewardship of Dr. Padmakali Banerjee, Honorable Pro Vice-Chancellor, Amity University Haryana has evolved into a Centre of Excellence in its practice-research-outreach endeavor. The Centre focuses on high-end research, creation and dissemination of knowledge and information on BRICS, analysis of politico-economic cooperation among BRICS, deliberation on public policy matters, and enhancement of people-to-people contact. While keeping track of the latest happenings in BRICS including various Summit meetings, the Centre for BRICS Studies has been at the forefront in organizing seminars, conferences, expert lectures, panel discussions, and college competitions, international publications. Renowned academicians, senior diplomats and industry professionals have been visiting the Centre in its various programs and events. All these endeavors are aimed at promoting the spirit of practice, research, and outreach with special focus on excelling student academic and extra-curricular performance-based outcome while enhancing academia-industry integration. From time to time students have submitted research articles on issues related to BRICS economies, which have been sent to journal for review and publication. The Centre for BRICS Studies is also offering Doctoral program on BRICS issues in collaboration with Amity Business School (ABS), apart



from existing courses in MBA program in International Business stream at ABS, Amity University Haryana. The Centre for BRICS Studies also publishes biannual BRICS Magazine that has become a popular reading in academic, diplomatic and industry domains. All these initiatives taken up the Centre for BRICS Studies for the purpose of enhancement and dissemination of knowledge and information about BRICS countries.

Goals:

- ❖ To promote high-end research, creating and disseminating knowledge and information on BRICS along three levels stated below:
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Public Events organized by “Centre for BRICS Studies” at Amity University Gurgaon:

- **Members of the Centre for BRICS Studies attended FICCI Seminar** – Two members of the Centre for BRICS Studies – Prof. Gaurav Singh Arora and Prof. Ashok Tiku represented the Centre for BRICS Studies at the “BRICS Seminar on Skills for Manufacturing 4.0” organized by the Federation of Indian Chamber and Commerce (FICCI) on September 16, 2016. Deliberations included issues related to current status quo of industry practices, scope of improvement, need and support of government for developing infrastructure in Industry 4.0 and how corporate sector in BRICS countries can facilitate on these matters.



- **Seminar on “Manufacturing Sector & Skill Development in BRICS Countries”**- The Centre for BRICS Studies organized a seminar on “Manufacturing Sector & Skill Development in BRICS Countries” at Amity University Gurgaon Campus on November 17, 2016. The Seminar was attended by academicians, practitioners, faculty members and students. In her inaugural speech Prof. (Dr.) Padmakali Banerjee, Honorable Pro-Vice Chancellor, Amity University Gurgaon and Chairperson – Centre for BRICS Studies, highlighted the growing convergence of manufacturing sector and skill development in BRICS countries in an era of rapid political and economic integration in global business paradigm. Other speakers at the Seminar included Ms. Purnima Anand, President-BRICS International Forum and Director, Foreign Policy Research Institute, New Delhi; and Mr. Amarnath Ghosh Dastidar, Consultant – International Business. The Seminar was a big success as it created a vibrant platform for question-answer, deliberation and analysis of the significance of skill development in enhancing productivity in the manufacturing sector especially in the context of BRICS countries emerging as a powerful politico-economic bloc.
- **Release of Inaugural Newsletter by the Centre for BRICS Studies** – The inaugural Newsletter of the Centre was launched in January 2017. It is a bi-annual Newsletter which covers recent happenings in BRICS countries related to business, political environment, technological environment, socio-cultural aspects, legal and regulatory framework.
- **Amity University Gurgaon and Centre for BRICS Studies – Russian State University Collaboration** – On January 25, 2017 at the invitation of the Centre for BRICS Studies and Amity School of Languages a nine member Russian delegation from Russian State University for Humanities (RSUH) visited Amity University Gurgaon. The Russian delegation consisted of Prof. Alexander Stalyarov, Director of International Centre for South Asian Studies, Dr. Lev Tetlin, Institute of Philosophy, Russian Academy of Science. The Russian delegation talked about “Peculiarities of Russian & Hindi as foreign languages in Multicultural Environment.” The talk was followed by a cultural performance by Amity University Gurgaon Russian language students as well as RSUH Hindi language students. Academic exchange, joint research collaborations, and areas of mutual cooperation were explored and discussed.
- **Seminar on “Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations”**- Centre for BRICS Studies organized a seminar on “Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations” at Amity University Gurgaon



Campus on March 03, 2017. The Seminar was attended by academicians, practitioners, faculty members, and students. In her inaugural speech Prof. (Dr.) Padmakali Banerjee, Honorable Pro-Vice-Chancellor, Amity University Gurugram and Chairperson – Centre for BRICS Studies, highlighted the growing convergence of BRICS countries in an era of rapid political and economic integration. Eminent speakers at the Seminar included Ambassador H.H.S Viswanathan, former Ambassador of India to Nigeria and Consulate General at the Consulate office in San Francisco, USA and currently Distinguished Fellow at the Observer Research Foundation (ORF), New Delhi; and Ambassador J.K. Tripathi, former Ambassador of India to Brazil. Ambassador Viswanathan talked about the growing strategic politico-economic partnership between India and African countries. Ambassador Tripathi talked about emerging political relations between India and Brazil in BRICS community. The Seminar was a big success as it created a vibrant platform for question-answer, deliberation and analysis of the significance of diplomatic and business relationships in BRICS countries.

- **Lecture on “Reviewing 70 years of India-Russia Diplomatic Relations and Future Prospects”** – Centre for BRICS Studies and Amity School of Languages in collaboration with RSUH (Moscow), Russian Centre for Science and Culture (New Delhi) and Embassy of Russian Federation (India) organized a lecture on India-Russia relationship since last 70 years on April 25, 2017 at Amity University Gurugram. The speaker at the event was Prof. Alexander Stalyarov, Director of International Centre for South Asian Studies. The broad areas discussed in the lecture comprised India-Russia defense, cross-cultural relationships, tourism and political relationships.
- **Memorandum of Understanding (MOU) Signed** - Centre for BRICS Studies and Amity School of Languages at Amity University Gurugram and Russian State University of Humanities (RSUH) signed Memorandum of Understanding (MOU) for the purpose of development of mutual cooperation related to the issues as mentioned below:
 - a. Joint research activities;
 - b. Joint organization and participation in seminars, courses, workshops, and other academic meetings on matters of mutual benefit;
 - c. Academic mobility (of faculty members, students, graduates, post-graduates, etc.);
 - d. Joint/Split Ph.D. for faculty and students;
 - e. Exchange of publications and other teaching materials.
- **Release of Second Issue of Newsletter by the Centre for BRICS Studies** – The Second Issue of Newsletter of the Centre was released on September 28, 2017. The



Newsletter was released at a glittering ceremony by Dr. Aseem Chauhan, Honorable Chancellor of Amity University Gurgaon on the occasion of Innovation Day celebrated in the University Campus.

- **Seminar on “A Futuristic View on Technology, Nature of Work and Jobs”** - The Centre for BRICS Studies, Amity University Haryana in association with the Faculty of Management Studies of Amity University Haryana organized an Expert Talk and Panel Discussion on “A Futuristic View on Technology, Nature of Work and Jobs” on March 6th 2018. The eminent speakers on the panel included Ms. Poonam Barua, Founder Chairman – Forum for Women in Leadership & CEO, Will Forum India; Mr. Anilesh Mahajan, Senior Associate Editor, India Today Group; Mr. Saurabh Agarwal, Founder & MD, Skillcube and Mr. Arihant Garg, Director, KPMG. The event was successfully anchored by Dr. Debasis Bhattacharya and Dr. Meenal Sharma Jagtap, Members Centre for BRICS Studies, AUH. Dr. Padmakali Banerjee, Dean Academics & Head, Centre for BRICS Studies delivered the opening remarks. She spoke on the critical skills that would be required in the future and how industry and academia need to adopt an integrated approach to meet the challenge thrown open by the emergence of new technologies. The programme intended to make the students aware of the technological developments and its impact on nature of work and jobs in the future. The experience of the speakers and their exposure to changing nature of work over the years brought out constructive suggestions on how the students have to shape their future course of actions.
- **Release of Third Issue of Newsletter by the Centre for BRICS Studies** – The Third Issue of Newsletter of the Centre was released on March 20, 2018. The Newsletter was released by Dr. Padmakali Banerjee, Honorable Pro Vice-Chancellor and Head – Centre for BRICS Studies at a colorful ceremony on the occasion International Language Day.
- **Release of Fourth Issue of Newsletter by the Centre for BRICS Studies** – The Fourth Issue of Newsletter of the Centre was released on September 28, 2018. The Newsletter was released by Dr. Ashok Chauhan, Honorable Founder President, Amity Education Group in the presence of Dr. Aseem Chauhan, Honorable Chancellor, Amity University Haryana; Dr. P.B. Sharma, Honorable Vice Chancellor, Amity University Haryana; Dr. Padmakali Banerjee, Honorable Pro Vice-Chancellor and Head – Centre for BRICS Studies and Members of the Centre for BRICS Studies in a glittering ceremony on the occasion Innovation Day celebrated in Amity University Haryana.



- **Invited Public Lecture at Jamia Millia Islamia University, New Delhi** – Prof. (Dr.) Debasis Bhattacharya, Professor at Amity Business School, Amity University Haryana and Member – Centre for BRICS Studies was invited to deliver a UGC funded public lecture at Jamia Millia Islamia University, New Delhi on November 22, 2018. The topic of the public lecture was “GST and Its Implications on Indian Political and Economic Landscape”.
- **Workshop on Research Methodology:** Dr. Meenal Sharma, Associate Professor at Amity Business School, Amity University Haryana and Member – Centre for BRICS Studies was invited as a resource person to deliver lecture in workshop on “Research Methodology and Data Analysis using STATA” held on January 20, 2019 at Haryana Bhawan, New Delhi.
- **Seminar on “BRICS & Changing world: Opportunities & Challenges”** - The Centre for BRICS Studies, Amity Business School organized a seminar on “BRICS & Changing world: Opportunities & Challenges” at Amity University Gurgaon Campus on February 26, 2019. Eminent speakers at the Seminar included Mr. Gustavo Westmann, Head Economic and Commercial office of Brazilian Embassy; and Mr. Anil Swarup, Author and Former Secretary School Education & Ministry of Coal, Government of India. In her opening address Prof. (Dr.) Padmakali Banerjee highlighted the growing convergence of opportunities and challenges in BRICS countries and significance of IBSA Dialogue in an era of rapid political and economic integration in global business paradigm. Mr. Gustavo Westmann talked about the growing strategic politico-economic partnership between Brazil and other BRICS countries. Mr. Anil Swarup, Former Secretary School Education & Ministry of Coal, Government of India delivered talk on “How to make things Happen in Government - Challenges & Potential in BRICS”. Mr Swarup talked about the current status-quo of education system in India and the road challenge ahead. He also deliberated about how collaborations among universities in BRICS nations can act as catalyst in strengthening relationship among BRICS countries. The Seminar was aimed at providing a vibrant platform to discuss the opportunities and challenges in the context of BRICS countries, which are emerging as a powerful politico-economic bloc.
- **Release of Fifth Issue of Newsletter by the Centre for BRICS Studies** - The Fifth Issue of Newsletter of the Centre was released on February 26, 2019. The Newsletter was released jointly by Prof. (Dr.) P.B. Sharma, Honorable Vice Chancellor, Amity University Haryana and Prof. (Dr.) Padmakali Banerjee, Honorable Pro Vice-Chancellor and Head – Centre for BRICS Studies at a seminar organized by the Centre for BRICS Studies.



- **Participation in International Conference in New York, USA in April 2019** – Prof. (Dr.) Debasis Bhattacharya, Professor at Amity Business School, Amity University Haryana and Member - Centre for BRICS Studies represented Amity University Haryana and Centre for BRICS Studies at the 8th International Conference on Business and Economic Development in New York, USA on April 8-9, 2019. Dr. Bhattacharya presented a paper coauthored with Prof. (Dr.) Padmakali Banerjee, Pro Vice Chancellor, AUH. The title of the paper is: “Multidimensional ROC Model – Rationalism, Constructivism and Optimism for Strategic Decision Process in International Environment.” Prof. (Dr.) Debasis Bhattacharya also chaired a session at the International Conference in New York, USA. The session topic/theme was: “Growth & Economic Development in EE/Globalization & International Trade.” The paper presented has since been published in the ProQuest and EBSCO Listed Conference Proceedings titled “The Business & Management Review” (ISSN: 2047-2862). The “Multidimensional ROC Model” paper presented in New York Conference is accepted for publication in July 2019 issue of SCOPUS-Indexed journal – “The Journal of Business and Retail Management Research”.

Book Publication (Global Level) – Milestone Achievements:

- A book titled **“GST and Its Aftermath – Is Consumer Really the King?”** co-authored by Dr. Debasis Bhattacharya, Professor of Amity Business School and Member - Centre for BRICS Studies, Amity University Gurgaon, has been published by SAGE Publications in January 2018.
- A book titled **“The Power of Positivity – Optimism and the Seventh Sense”** authored by Dr. Padmakali Banerjee, Pro Vice-Chancellor and Head – Centre for BRICS Studies, Amity University Gurgaon, has been published by SAGE Publications in May 2018.

Centre for BRICS Studies – A Source of Inspiration for MBA & BBA Students in Amity Business School:

Learning about BRICS alliance help management students in understanding of business specifics in these countries, knowledge of business environments, and readiness to work under challenging and fast-changing conditions. BRICS countries are an important driving force of economic growth. The growth of Brazil, Russia, India, China, & South Africa (BRICS) has been explosive over the last 10 years. Forecasts suggest that they will continue to be the main drivers of global growth in the coming decades. Even the recent global financial crisis has had relatively little impact on their economies. Companies are increasingly turning



their attention to these countries. From being providers of natural resources and labor, these countries now have large and affluent middle-class consumer markets. They are also emerging as a source of information. Despite the fact that the BRICS hold immense potential, they are certainly not the countries that are easy to understand or operate in. The average consumer in the BRICS countries is very different from those in the developed economies. The laws governing business are different as is the business environment. Differences also exist in the role played by government, economic systems, availability of natural resources and population demographics. Management students participating at centre of BRICS at Amity University benefit from interactions with professors with deep knowledge of these markets, industry leaders who have a real-world perspective on leading business in these countries. Practically management students have a better understanding to conduct PESTL analysis about these countries after learning about these countries. By learning about this alliance of BRICS countries participants with the knowledge, skills, and insights into successful investment and operation models in the BRIC countries. Management students of International Business need to learn about recent development in regional trade agreements happening across WTO members and most importantly when Russia entered into WTO forum, thus learning about BRICS alliance help the students to correlate the basics of International Economics, Trade agreements, International finance, International Legal Environment and International marketing with recent happenings among BRICS countries.

BRICS countries are an important driving force of economic growth. Through their political and financial support, the BRICS countries made a substantial contribution to the anti-crisis measures adopted in 2008-2010. The countries also played an important role in drafting key decisions for the reform of the World Bank and the International Monetary Fund. There is great potential in these five countries not just combining to address global issues, but perhaps even more significantly, learning from one another. For example, India has much to learn from Brazil and China in the matter of development banking. there are areas in which other BRICS countries could learn from India, while the description of the work of the South African Development Bank illuminated the strategy of creating financial structures and mechanisms to promote the 'green economy' through environmentally desirable activities and technologies. There are also immense possibilities for technology sharing and even co-ordinating technology development, in a world where



intellectual property rights still largely controlled by Northern multinational companies have emerged as a major constraint on development. Formation of New Development Bank by BRICS countries is one of the most vital project initiatives taken by BRICS members strengthening the position and importance of this group in international economy, BRICS member countries signed an agreement to establish the \$ 100-billion New Development Bank and a reserve currency pool set at \$ 100 billion. China is expected to contribute the largest share of \$ 41 billion, while Russia, India and Brazil will contribute \$ 18 billion each. South Africa is expected to chip in with the balance \$ 5 billion.

Miscellaneous Work at the Centre for BRICS Studies:

- **Research Papers:**

Students at Amity University Gurgaon are encouraged to write research papers on trade and business related to BRICS countries. In particular, students of Amity Business School have submitted term papers, dissertation projects on various topics such as trade relations between India and China; Geopolitical tensions between India and China; Out-sourcing from China etc.

- **Assignments:**

Students are given mandatory assignments related to BRICS from time to time. Such assignments as allocated to students of Amity Business School were from the following courses:

Course Code	Course Title	Lectures (L) Hours per week	Tutorial (T) Hours per week	Practical (P) Hours per week	Total Credits
MIB 4107	Principles of Global Business Management	4	-	-	4
MIB 4204	Growth Prospects of Thrust Areas of Indian Exports	3	-	-	3
MIB 4304	WTO & International Regulatory Environment	3	-	-	3
MIB 4307	International Financial Management	2	1	-	3
MIB 4402	Global Sourcing & Business Development	3	1	-	4

- **Case Presentations:**



Students have given case based presentations related to BRICS from the subjects in the program structure. Students worked on extensive cases on BRICS countries published by reputed institutes. More than 25 cases have been presented by students from time to time in class proceedings during case based presentations.

Few of Good Case Based Presentation Delivered by students are as follows:

Serial No.	Name of Case	Institute/ Reference/ Source of Case	Link/Source
1	Retail Chains open up in India's Dental Market	Wharton	http://www.littleindia.com/life/16462-retail-chains-open-up-india-s-dental-market.html
2	The Bharti-Walmart Breakup: Where Does FDI in India Go Next?	Wharton	https://knowledge.wharton.upenn.edu/article/bharti-walmart-breakup-fdi-india-go/
3	The Future of the Indian Rupee Is Tied to Oil Imports	Wharton	https://knowledge.wharton.upenn.edu/article/future-indian-rupee-tied-oil-imports/
4	Starting a Company in Brazil: Not for the Faint of Heart	Wharton	http://knowledge.wharton.upenn.edu/article/starting-company-brazil-faint-heart/
5	Prestige Events in the Gulf Turn the Spotlight on Labor Practices	Wharton	http://knowledge.wharton.upenn.edu/article/prestige-events-gulf-turn-spotlight-labor-practices/

- **Term Papers:**

Students are exposed to extensive research at the Centre for BRICS Studies. Students did research and presented them in the form of Term Papers and/or Dissertation Projects. Details of a few selected Term Papers submitted by students are stated below:



Sl. No.	Title of the Term Paper	Student Name	Program
1.	Institutional Framework of Maritime Transport in India	Ms. Ashwerya Gupta	MBA - IB
2.	Managing International Human Resource Activities	Mr. Gaurav Kumar	MBA - IB
3.	SEZ and Policy Framework in Context to Trade	Ms. Jasleen Kaur	MBA - IB
4.	Future of Indian Retail Industry	Ms. Kalpana Yadav	MBA - IB
5.	Role of ICT in Era of Globalization	Ms. Priyanka	MBA - IB
6.	Women Empowerment & Entrepreneurship – The rise of Third Billion	Ms. Vishakha Upadhya	MBA - IB
7.	Influence of Information Technology on Outsourced Trade Operations between India & China	Mr. Krishnendra Dubey	MBA - IB


● **Dissertations for MBA/BBA students:**

Students have been encouraged at the Centre for BRICS Studies to write and submit dissertation projects based on empirical research from time to time. Some of the areas in which students are motivated to write dissertation are stated below:

- Issues on Trade & Technology among BRICS countries
- Technology, FDI and Cooperation
- Role of Government in Technical Collaboration
- Services, Output and Employment in the BRICS
- Services, Investment and BRICS
- Intellectual Property Rights issues among BRICS countries

Below are the details of dissertation projects submitted by students:

Serial No.	Name of the Project	Name of Student	Program
1	Influence of the country-of-origin on consumer behaviour- A study on Electronic Segment.	Iman Jana	MBA-IB
2	A comparative study on E-Banking Readiness among employees of Public and selected Foreign Banks in NCR.	Aditya Sharma	MBA-IB



3	A study on Consumer perception towards foreign and domestic brands in apparel Industry.	Aranya Kaul	MBA-IB
4	A comparison of CRM activities between Japanese companies and Chinese companies in Automobile sector.	Sourav Hooda	BBA

- **Doctoral Program:**

The Centre for BRICS Studies in collaboration with Amity Business School is also conducting Doctoral studies for research scholars who are interested in pursuing Doctoral degree in topics related to BRICS. Currently one Doctoral research scholar, Mr. Amarnath Ghosh Dastidar, is pursuing Doctoral Studies on the topic of E-Tail trade practices in BRICS community.

The BRICS Team:

- **Prof. (Dr.) Padmakali Banerjee**
Pro-Vice Chancellor & Dean Academics
Amity University Haryana
Head & Chair – Centre for BRICS Studies

- **Prof. (Dr.) Vikas Madhukar**
Deputy Director – Amity Business School
Director – Admissions
Amity University Haryana
Member - Centre for BRICS Studies

- **Prof. Ashok Tiku**
HOD – Amity Business School
Amity University Haryana
Member - Centre for BRICS Studies

- **Prof. (Dr.) Debasis Bhattacharya**
Professor – Amity Business School
Amity University Haryana
Member - Centre for BRICS Studies



- **Dr. Gaurav Singh Arora**
External Member - Centre for BRICS Studies
- **Dr. Suvro Parui**
Assistant Professor – Amity School of Languages
Amity University Haryana
Member - Centre for BRICS Studies
- **Mr. Rakesh Kumar**
Assistant Professor – Amity School of Fine Arts
Amity University Haryana
Cover Page Designer - Centre for BRICS Studies

Pictorial Gallery:



Group photo of MOU with the Russian State University and Amity University Haryana Prof. (Dr.) P.B. Sharma Hon'ble Vice-Chancellor and Prof. (Dr.) Padmakali Banerjee, Hon'ble Pro Vice Chancellor, Prof. Alexander Stalyarov, Director of International Centre for South Asian Studies



Group photo at Centre for BRICS Studies Seminar on "Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations"



Ambassador H.H.S. Viiswanathan addressing audience at Centre for BRICS Studies Seminar on "Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations"



Ambassador Mr. J.K.Tripathi addressing audience at Centre for BRICS Studies Seminar on "Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations"



Prof. (Dr.) Padmakali Banerjee addressing audience at Centre for BRICS Studies on "Growing Strategic Significance of BRICS in International Community: India-South Africa –Brazil Relations"



Book Release on GST and its after math.



Group photo of MOU with the Russian State University and Amity University Haryana Prof. (Dr.) P.B. Sharma Hon'ble Vice-Chancellor and Prof. (Dr.) Padmakali Banerjee, Hon'ble Pro Vice Chancellor, Prof. Alexander Stalyarov, Director of International Centre for South Asian Studies



Mr. Arihant Garg, Director, KPMG addressing a session at Centre for BRICS Studies seminar in AUH



Prof. (Dr.) Debasis Bhattacharya of Centre for BRICS Studies delivering invited public lecture at Jamia Milia Islamia Central University, New Delhi



Ms. Poonam Barua – Founder Chairperson, Founder for Women and Leadership & CEO, Will Forum India addressing a session at Centre for BRICS Studies seminar, AUH



Group Photo of Memorandum of Understanding With Russian State University, Moscow

BRICS Seminar held on February 26, 2019





Amity Center for Innovation in Education

Amity Center for Innovation in Education was launched by the Honorable Chancellor Dr Aseem Chauhan on the occasion of Innovation Day September 2, 2014, with a prime objective of fostering innovation and capacity building in higher education. This center constantly monitors studies and implements innovation in curriculum and promotes multidisciplinary and education pedagogy. Some of the verticals under this center include –

- i. Amity Capacity Building Center
- ii. Skill Development and Vocational Program
- iii. LEED Lab
- iv. Oréll DIGITAL LANGUAGE LAB
- v. IIRS-ISRO Network Center Remote Sensing and GIS
- vi. Amity Centre of Open Learning and Technologies



Amity Skills Institute

A mission with a vision



Our mission is to create a niche in the arena of Skill Development, Training and Consultancy. The aim is to garner internal resources and construct a robust premise of top of the line training consultancy. Amity Skill Institute is a vision towards an integrated, evolved and sublime system of education that seeks to promote wisdom, integrity and employability among individuals by addressing the gap between education and the skills needed for a particular job. Our commitment to make a palpable difference in the employability quotient of a person shall continue to remain our guiding 'mantra'. Owing to our location, we are obligated to make a



difference in the culture and lives of the people living in and around Manesar to start with. Creating skilled professionals in Manesar will balance out the demand and supply equation of the area and also put a check on exodus of the local inhabitants seeking greener pastures and yet settling for unskilled jobs. We have delineated a roadmap reaching the remote and far flung reaches of this country through imparting skills. We remain sensitive to the aspirations of our youth force and will continue to touch lives with feeling and panache.

Creating Collaboration towards Achieving goals

Amity Skills Collaborated with various national and international organizations to expand its horizon and reach. Here are some of our collaborations:

S.no.	Name	Date	Valid till	Association	Outcome
1	Agriculture Sector Skills Council of India	02-10-2015	02-10-2018	ASI	Guest lectures
2	Apparel & Furnishing Design Skill Sector	02-11-2015	02-11-2018	ASI	Running Skill Track based on skill development
3	Apparel & Furnishing Design Skill Sector	13/06/2018	06-12-2019	ASI	Running Skill Track based on skill development
4	ASDC apparel & furnishing Design Skill Sector	21/08/2014	22/08/2016	ASI	
5	Electronic Sectors Skills Council of India	02-04-2015	02-03-2018	ASI	Organized events and guest lectures in collaboration
6	FlyWings Simulators Training Centre Pvt. Ltd.	01-01-2017	31/12/2019	ASI	Guest lectures, Developed modules for training in cabin crew and ground training; Short tern aviation training programmes
7	Life Sciences Sector Skill Development Council	18/02/2015	17/02/2018	ASI	
8	National Entrepreneurship Network NEN	24/05/2016	31/09/2019	ASI	Various students' programmes and FDPs organized
9	National Skill Development Corporation (NSDC)	02-05-2015	02-05-2020	ASI	Various events, collaborations and programmes are being organized under the collaboration.
10	Retail Skill Sector Council of India	29/01/2015	No date	ASI	
11	Rubber Skill Development Council	18/02/2015	18/02/2018	ASI	Skill development programmes developed based on QPs
12	Security Sector Skill Development Council	13/02/2015	13/02/2018	ASI	In talk for skill development programmes for security staff
13	SOS Children's Village of India	16/08/2018	15/08/2021	ASI	Mobilization of students for all HSRT & Suryamitra programmes
14	Miles Publication Pvt Ltd	24/08/2016	23/08/2019	ASI	CMA programme is being offered as a value added programme.
15	FARELABS	26/05/2017	25/05/2020	ASI	Students' field visits
16	ISDC	08-06-2019	6th Aug 2022	ASI	Value added programmes are being introduced





Skill Track as an open elective to increase employability

As an adroit maneuver, AUH added Skill Track as an open elective to ensure skill development among students as they prepare to join the industry. As open electives in the flexi credit system, two skill tracks were added in Apparel and Hospitality, which got a prolific response from the students. come with the added advantage of assessment and certification from Government of India.

Fahsion/Hospitality	Skill Track Name	2019-20
Hospitality	Food production Technique	14
Hospitality	Food & Beverage	11
Hospitality	Front Office Operations	6
Hospitality	Housekeeping Functions	0
Hospitality	Tourism Operations	19
Fashion	Fashion Design	21
Fashion	Fashion Management	28

AUH became a part of the noble Government Skill Development Project

Programme name	No. of Candidates Trained	Ministry
Suryamitra Skill Development Programme	15	Ministry of New and Renewable Energy
Hunar Se Rozgar Tak	25	Ministry of Travel and Tourism





Faculty and Staff Development Program

In tune with its vision of continual development ASI organizes many Faculty and Staff Development Program

S.No.	Date(DD/MM/YY)	Name of Event	Guest Speaker	No. of participants
1	22-Dec-16	Motivational Lecture by Director Read India	Ms. Geeta Malhotra, Director Read India	143
2	13-Jul-17	Motivational Talk on work related stress	Dr. Brahmdeep Sindhu, Senior Medical Officer Civil Hospital Gurgaon	550
3	10-Nov-17	Leadership Lecture Series Launch by the Author Deepak Malhotra	Dr. Deepak Malhotra, Author	197
4	8-Mar-18	International Women's Day	Dr. Pooja Sharma, MD Gynecology, Medanta Hospital	168
5	27-Aug-18	Webinar Skill Development for Employment Generation in India	Dr.Amit Goyal NITTTR Director., Dr H.K Verma (Director, Extension GADVASU), Ajay Godara (Startup initiator NITTTR), Dr. Rajat Bhatnagar(State Engagement Officer, NSDC)	25
6	8-Mar-19	International Women's Day	Ms. Anita Bimal, GM at ITDC	174
7	13-Sep-19	Gender Neutral Workplace	Dr. Rajulben L.Desai, Hon'ble Member National Commission for Women	35

Training for Staff Members

Date	Name	No. of staff trained
03 June-14 June 2019	Enhancing English Language	35
15 Oct 2018	Workshop on basic etiquette, grooming, hygiene and anger management for Security guards and Marshals	15
03 May 2018	Drivers training on road safety and etiquette	31



External Training by Amity Skills Institute

Date	Name	No. of staff trained	Participants
08 September 2017	Rain Group Insight Training	14	Corporate
14 August 2018	Vishwakarma Skill University	16	Staff of Vishwakarma
08 August 2020	Live culinary workshop on Desserts	52	Corporate and Home makers
24 July 2020	Live culinary workshop with Subir Malakar	49	Corporate and Home makers
10 July 2020	Workshop with Summer mocktails with Chef (Dr) Kunal Seth	25	Corporate and Home makers
09 December 2020	Workshop on Soft skills and	38	Corporate



Student Delegation Visit From Monmouth University, USA

Amity dignitaries with delegation from Monmouth University, USA Amity University Haryana hosted a delegation of Researchers, Experts and Professors from Department of Psychology, Monmouth University, USA, on 08 January, 2019.



Yoga Added as A Skill Initiative:

Yoga has been added as a Skill Initiative at AUH in collaboration with Amity Center for Yoga Education, Therapy and Research. Head of the department Ms. Nitu Sinha has been appointed as the Skill Coordinator.

Pranayama

- Anulomaviloma Pranayama
- Suryabhedana Pranayama
- Bhastrika Pranayama
- Bhramari Pranayama

- Improves the capacity of lungs.
- Increases oxygen concentration in blood.
- Heart rate , respiratory rate , pulse , blood pressure will be controlled .
- Parasympathetic activity is enhanced and suppressing excess sympathetic activity , there by control stress.

AMITY UNIVERSITY GURUGRAM



ASI collaborated with EDUGATE, an online learning platform for the students

Edugate, (URL : <https://edugate.org/>) is an e-learning/edu-tech company, in tune with our objective of developing blended learning and skills in teaching processes. Edugate aims to supplement classroom learning and bridge the skill gap that exists between academia and continuously evolving industry. The well researched online programmes come at no extra cost for the students. After a basic mapping, the online programmes are proposed to be integrated with the course curriculum and used as a value addition.

Almost 1000 students have already registered themselves along with the faculty whose involvement will be essential for the integration of these programmes into the curriculum.

Students Workshops:

Skill Development and making our students future ready is the underlined aim of Amity Skills Institute. Here are some of the Workshops that we organized from the time of our inception. The unique objective of the workshops is to provide students exposure in different subjects and disciplines for their all-round development. Over the years we have organized many workshops. Here is the list.



S.No	Date(DD/MM/YY)	Last Date	Name of Training	Venue	AUH trainer/Speaker	Guest Trainer/Spe	No. of participants
1	15-Jan-16	15-Jan-16	College Connect Activity	GCS Ballabha	Dr. Reena Nigam	NA	365
2	19-Jan-16	19-Jan-16	Amity Law Mission	AUH	NA	NA	56
3	12-Feb-16	12-Feb-16	College Connect Activity	AUH Nuh	Dr. Reena Nigam	NA	523
4	17-Feb-16	17-Feb-16	Art & Design Mission-2016	A Block Audi	Delegates from U.K	Ian Farren, Associate Director at Plymouth College of Art Megan Knight, Associate Dean (Recruitment, Partnerships and International) At University of Hertfordshire School of Creative Arts	81
5	19-Feb-16	19-Feb-16	Application of colors	AUH	Delegates from U.K	Ms Papiha Saha	81
6	01-Jul-16	01-Jul-16	Workshop on First Impression	NA	Reena Nigam	NA	50
7	01-Jul-16	01-Jul-16	FDP on Etiquette for Non teaching staff	NA	Reena Nigam	NA	50
8	02-Jan-17	31-Mar-17	Body Language & Hand Shake	AUH	Dr.Reena Nigam, Col. Gulati	NA	30
9	24-Jul-17	26-Jul-17	School and College Connect Activity	D Block	Dr. Reena Nigam	NA	320
11	04-Sep-17	04-Sep-17	Communication Workshop	MDP Room A Block	NA	Ms. Sonal Munjal	41
13	08-Sep-17	09-Sep-17	Motivational Talk on work related stress	Conference Hall A Block	NA	. Brahmdeep Sand	41
15	15-Nov-17	15-Feb-18	College Connect Activity	AUH	Dr.Reena Nigam, Dr. Subhra Das	NA	30
17	25-Jan-18	25-Jan-18	College Connect Activity	Dronacharya College, Gurgaon	Dr. Reena Nigam	NA	322
18	30-Jan-18	30-Jan-18	College Connect Activity	Dr B R Ambedkar College,Palwal	Dr. Reena Nigam	NA	350
27	10-Sep-18	20-Dec-18	Communication Workshop	ASH 'AUH'	ASI and ASH Team	NA	28
28	18-Sep-18	21-Sep-18	Workshop on First Impression	C Block	Dr. Reena Nigam	NA	362
29	30-Sep-18	30-Sep-18	Workshop on Basic Etiquette,Grooming and hygiene	A 201, AUH	NA	Manshita	46
31	22-Oct-18	25-Jan-19	Cosmetic Formulation & Branding	AUH	Dr Ayana Bhaduri, Dr Monika Vats, Mr Rakesh Kumar and Dr Deependra Sharma	NA	30
32	23-Oct-18	26-Oct-18	TRAINING ON INTERVIEW SKILLS	201A 'A' Block	Ms. Sonali Kakkar	NA	30
33	03-Jan-19	03-Jan-19	College Connect Activity	Government College Narnaul	Sonali Kakkar	NA	100
34	12-Jan-19	12-Jan-19	Enhancing Creativity	Faridabad	Ms. Esha Jainiti	NA	250
35	25-Jan-19	25-Jan-19	TRAINING ON INTERVIEW SKILLS	C Block Foyar AUH	Ms. Sonali Kakkar	NA	27
36	29-Jan-19	29-Jan-19	TRAINING ON INTERVIEW SKILLS	AGGARWAL COLLEGE, BALLABGARH	Ms. Sonali Kakkar	NA	110
38	15-Feb-19	15-May-19	College Connect Activity	AUH	Dr. Reena Nigam	NA	30
39	24-Feb-19	24-Feb-19	TRAINING ON INTERVIEW SKILLS	Paharpur Business Centre, 21, Nehru Place, New Delhi, Delhi 110019	Ms. Sonali Kakkar	NA	487
40	19-Mar-19	19-Mar-19	TOEFL	Mewat Engineering College,NUH	NA	NA	60
41	28-Mar-19	28-Mar-19	TRAINING ON INTERVIEW SKILLS	B Block Audi AUH	Ms. Sonali Kakkar	Mr. Dheeraj, Ms. Garima and Ms. Ankita	55
42	29-Mar-19	29-Mar-19	Training on NEET examination	GOVERNMENT COLLEGE,HAILY MANDI	Ms. Sonali Kakkar	NA	40
43	24-Apr-19	24-Apr-19	Training on NEET examination	Amity Institute For Competitive Examinations- Defence Colony	Ms. Sonali Kakkar	NA	45
44	26-Apr-19	26-Apr-19	Training on NEET examination	Amity Institute For Competitive Examinations- Mayur Vihar	Ms. Sonali Kakkar	NA	25
45	26-Apr-19	26-Apr-19	TRAINING ON INTERVIEW SKILLS	Amity Institute For Competitive Examinations- Defence Colony	Ms. Sonali Kakkar	NA	15
46	03-May-19	03-May-19	TRAINING ON INTERVIEW SKILLS	Government College of Women. Salaheri, Nuh	Ms. Sonali Kakkar	NA	80
48	03-Jun-19	13-Jun-19	Communication Workshop	C-214, AUH	Dr. Reena Nigam	Mr. Inderjeet Mittal	35
49	30-Jul-19	01-Aug-19	Study Abroad and Career Choices'	C Block	Col. Anil Glati, Dr. S.N. Sridhara, Dr. Reena Nigam	NA	300
50	31-Jul-19	31-Jul-19	Communication Workshop	B Block Audi AUH	Dr. Reena Nigam	Mr. Pankaj Jain	250
51	06-Aug-19	08-Aug-19	College Connect Activity	B Block	Ms. Sonali Kakkar	NA	350
52	28-Aug-19	28-Aug-19	Lifestyle Changes & Health Mgt.	Gurgaon Lord Jesus Pu	Dr. Luxita Sharma	NA	285
53	02-Sep-19	02-Sep-19	Medical Sales	Old Library A Block	Dr. Reena Nigam, Dr. Satish Sardana, Dr. Rakesh Kumar, Ms. Anjali Dhiloon	NA	81
55	13-Sep-19	13-Sep-19	College Connect Activity	MDP Room A Block	Dr. Reena Nigam	Dr. Rajulben L.Desai	35
56	17-Oct-19	17-Oct-19	Alternative Nutrition	Indraprastha Convent Senior Higher Secondary School Begumpur, New Delhi	Chef. Kunal Seth, Chef Subir Kumar Malakar, Mr. Vinod Chauhan	NA	300
57	24-Oct-19	24-Oct-19	Workshop on Financial Planning and Taxation	Food Production Lab, ASH	Dr. K Balanaga Gurunathan	NA	20





Workshops and Webinars during the Lockdown

Our skill Development initiatives continued even during the lockdown through the online portal and support provided by Amity's IT team. During the pandemic we trained thousands of students, corporates and Faculty on varied areas like Finance, Soft skills, Communication, Hospitality, Fashion, Culture, Fine Arts and Health and Nutrition.

S.No	Date	Topic
1	24-Oct-19	Workshop on Alternative Nutrition
2	19-Dec-20	Financial Planning & Taxation
3	13-Feb-20	Workshop on analyzing balance sheet in 30 Seconds
4	30-Apr-20	Netiquette Understanding the norms of online
5	04-May-20	Art and Culture as the Savior of Human Kind During Covid 19 Pandemic
6	05-May-20	Workshop on Soft Skills and Communication for the road to success
7	14-May-20	Webinar on Pandemic and it's economic implications on life and living: A way forward
8	26-May-20	Workshop on Soft Skills and Communication for the road to success
9	27-May-20	The Role of Yoga in Improving Health and Immunity
10	04-Jun-20	Pharmaceutical Sales, Marketing, Business Development and Quality Assurance.
11	12-Jun-20	Live Culinary Masterclass
12	10-Jul-20	Workshop on Summer Mocktails with Chef (Dr) Kunal Seth



13	14-Jul-20	Water Color Master Class With Ambbali
14	24-Jul-20	Live Culinary Workshop with Subir Malakar
15	08-Aug-20	Live Culinary Workshop on Desserts
16	09-Dec-20	Workshop on Soft Skills and Communication



WATER COLOUR MASTERCLASS with AMBBALI
 An International Watercolorist, Art Educator & Art Activist

Date: 14th July 2020
Time: 1500-1700 H
Zoom Meeting Link:
<https://us02web.zoom.us/j/81149494316?pwd=eXlBUzFtSHBYUjVya1hDd2taZ3JZZz09>

Amity University Haryana invites you to join

Workshop on **SOFT SKILLS & COMMUNICATION**



Contents of the workshop

- Making a great first impression
- Effective communication
- Interpersonal communication
- Conflict resolution
- Stress management

Date: 09th Dec 2020
Time: 1500 to 1700hours
Link to Join:
<https://amityuni.live/85784057137>

Dr. Reena Nigam,
 Associate Professor,
 HoD Amity Skills Institute,
 Amity University Gurugram



Wrocław University
of Science and Technology



Co-funded by the
Erasmus+ Programme
of the European Union



Amity Capacity Building Centre

Amity University Haryana-India

(Under CABICIN)



Amity Capacity Building Centre:

Amity Capacity Building Centre (ACBC) has been established at Amity University Haryana as a part of CABCIN project to provide a sustainable solution to raise the standards of teaching staff in Indian as well as foreign HEIs. It will be a part of Amity Centre for Innovation in Education (ACIE) which is being headed by the Pro-Vice Chancellor Prof(Dr) Padmakali Banerjee.

The main objective of the centre is to build up the capacity and quality of teaching at various HEIs. Another key focus area of the centre includes cooperation with HEIs located outside India and enhances internationalization.

The Centre will initiate the training on continuous basis to current and future HEI teachers and expose them to latest pedagogical skills to prepare them to replicate the same while delivering their sessions. This will ensure the up-gradation of quality of knowledge deliverance.

Vision:

To be a world class capacity building centre of creativity and innovation and to provide sustainable solution to raise the standards of teaching staff in Indian and foreign HEIs through excellence in education, by conducting cutting edge research and focusing on internationalization.

Mission:

ACBS nurtures the talent and enhance creativity among teachers as well as and students and promotes interdisciplinary, trans-departmental and trans-national culture .It also to fosters academic innovations in all aspects of functions performed by HEIs and promotes collaboration and cooperation with other HEIs for research.

Objectives:

This Centre has been set up to achieve the following objectives-

- To strengthen the existing capacity and quality of teaching at AUH and other HEIs.
- To develop a team of dedicated and passionate faculty members to conduct high-quality and innovative learning courses, deliver feedback and create resources to make excellent teaching possible.
- To motivate faculty members to conduct high quality impactful research.



- To create a platform for mutual sharing of knowledge and skills learned with national International HEI.

Intended Activities:

Amity Capacity Building Centre has identified various activities that it intends to carry out to fulfill the objectives of the centre. The activities (however it is not an exhaustive list) include:

- Faculty Development Programs(*General/Customized for internal & external faculty*)
- Management Development Programs(*help in developing integration with industry*)
- Conducting workshops for IQAC
- Conducting workshops Directors/HOI/HOS for accreditations.
- Developing Study Learning Materials (SLM) for various courses.
- Offering certificate programmes on Six Sigma, Leadership etc

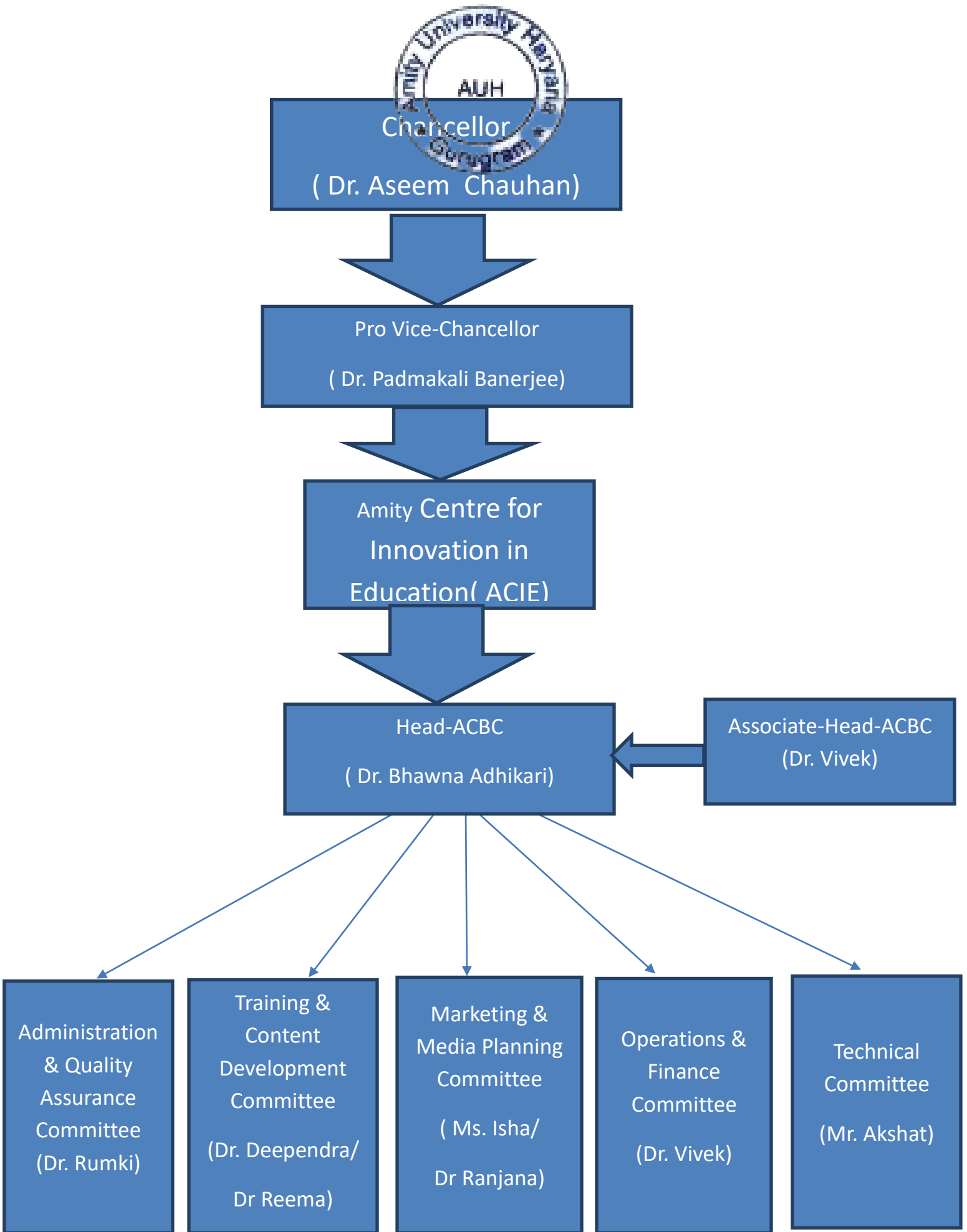
Desired Impact:

Amity Capacity Building Centre through various activities desires to make impact on various stakeholders of HEI like-

- **Faculty:** This will improve the quality of knowledge dissemination as well as knowledge creation due the cross-pollination of ideas.
- **Students:** Quality students can be created only thru quality teachers who will be sharing with the students' world class education through latest pedagogical techniques with optimum ICT intervention ENHANCING employability.
- **Academic Administrators:** Once they are sensitized about various changes taking in academics landscape they would be instrumental in creating and sustaining an environment conducive for this changing landscape.
- **Corporate Sector:** Will be getting the solutions to their problems, will be trained on various skills, will get students with required set of KASH.
- **Management of HEI:** Quality teachers, Quality students, quality industry integration will be a differentiation difficult to be replicated resulting High visibility resulting higher admissions.

Structure of Amity Capacity Building Centre:

A formal structure for the ACBC has been developed to ensure that it attains the objectives for which it has come into existence. The structure classifies how different activities i.e., task allocation; coordination and supervision are directed toward the achievement of the Centre's objectives in an effective and efficient manner. The centre will be running as an independent centre under ACIE.





Details about Roles and Responsibilities:

Different committees have been formed to ensure the hassle free functioning of the ACBC. The Committee heads would be accountable for accomplishing the tasks of their respective committees. The details are as:

Job position name: Head- ACBC

Reporting Officer: Pro-Vice Chancellor

Tasks:

- i. Developing VISION & MISSION (V&M) of ACBC in alignment with vision and mission of AUH.
- ii. Developing strategy and action plan to accomplish the V&M of ACBC.
- iii. Promoting the philosophy of the ACBC.
- iv. Supervising the tasks performed by various committees.
- v. Facilitating the functioning by arranging the required resources (i.e., physical resources, HR resources, financial resources).
- vi. Developing and monitoring a budget for ACBC
- vii. Preparing the outcome reports activity wise and annual report to be presented to the Pro-Vice Chancellor

Job position name: Associate-Head- ACBC

Reporting Officer: Head- ACBC

Tasks:

- i. To serve as an administrative aide to the Head-ACBC
- ii. To assist the Head-ACBC in the implementation and discharge of her responsibilities.
- iii. To advise Head- ACBC on various matters related to ACBC.



Job position name: Head/Incharge/ Coordinator- Operations & Finance

Reporting Officer: Head-ACBC

Tasks:

- i. To identify upcoming technologies and alternative methods to improve efficiency.
- ii. To look after procurement of the resources required for the smooth functioning of ACBC.
- iii. To prepare and review budgets in coordination with Head-ACBC and to manage costs.
- iv. To oversee inventory and its utilization i.e. of servers, laptops and other hardwares, and facility layout of the centre.
- v. To prepare regular finance and operations reports.

Job position name: Head/Incharge/ Coordinator– Administration & Quality Assurance

Reporting Officer: Head-ACBC

Tasks:

- i. To address and manage queries related to ACBC raised by different stakeholders of AUH (i.e., trainees, Directors/HOI/HOD etc)
- ii. To manage meetings with other organizations and various departments of AUH in coordination with PR & Marketing committee.
- iii. To coordinate administrative and logistics support to members of ACBC before, during and after training sessions.
- iv. To ensure that quality controlling process are followed during the trainings.
- v. To audit the documents of various committees and prepare a report monthly, quarterly and annually.
- vi. To prepare a consolidated feedback and analysis report of different activities conducted by ACBC.
- vii. To maintain and update ACBC database.



Job position name: Head/Incharge/ Coordinator – Marketing and Media Planning

Reporting Officer: Head-ACBC

Tasks:

- i. To plan promotional (i.e. advertisement, publicity, PR) strategies and campaigns for ACBC.
- ii. To create awareness about ACBC within and outside AUH.
- iii. To write press releases and liaison with different media houses.
- iv. To liaison with external and internal prospective trainees (including universities, academic institutes , corporate, NGOs, Hospitals etc)
- v. To get the activities of ACBC posted on AUH website.
- vi. To launch and run a newsletter dedicated to ACBC.
- vii. To maintain a status of the various universities, academic institutes, corporate, NGOs, etc contacted in terms of outcome of interaction.

Job position name: Head/Incharge/ Coordinator – Technical Committee

Reporting Officer: Head-ACBC

Tasks:

- i. To ensure regular technical up-gradation of centre.
- ii. To support and resolve the technical issues on server and user end
- iii. Maintenance of the S/W, H/W and Network of the centre.
- iv. Brainstorm and discuss with the trainer on the IT resources required for content to be delivered during the session.
- v. Updating the events on University website in coordination with PR team



Job position name: Head/Incharge/ Coordinator- Training & Content Development Committee

Reporting Officer: Head-ACBC

Tasks:

- i. Creating processes to identify the areas on which trainings need to be imparted.
- ii. Analyzing and finalizing such areas.
- iii. Developing specific topics to provide training on finalized areas.
- iv. Facilitating and supervising the trainings curriculum and content developed.
- v. Developing procedures for gathering applications of potential participants.
- vi. Developing process for participants selection.
- vii. Developing trainings calendar
- viii. Developing, implementing and supervising the over quality controlling process.

Job position name: Head/Incharge/ Coordinator–Training Committee/Trainer

Reporting Officer: Head-ACBC

Tasks:

- Developing curricula of trainings according to given trainings topics needs.
- Developing content of trainings according to curricula.
- Conducting trainings according to trainings plan.
- Co organizing each training session based on the given trainings plan.



Activities conducted:

S. No.	Nature of Activity	Date	Domain	Location	Target Participants	Number of Participants	Resource Person/ Coordinator	Remarks
1a	Seminar Cum Workshop	30/10/2018	Student Engagement/ E-learning	Amity University Haryana	Faculty	40	Dr Vikas Thada/Mr Ankit	Ann-1
1b	Seminar Cum Workshop	1/11/2018	Student Engagement/ E-learning	MBLM College of Education, Gurgaon	Faculty	82	Dr Vivek Jaglan	Ann-1
1c	Seminar Cum Workshop	3/11/2018	Student Engagement/ E-learning	SAITM, Gurgaon	Faculty	36	Dr Vivek Jaglan	Ann-1
2	Workshop	6-7/2/2019	Workshop on Outcome Based Education	ASET, Amity University Haryana	Faculty	58	Dr. S.N. Sridhara	Ann-2
3	Workshop	19/3/2019	CO-PO and PSO Mapping as per OBE Practices	ASET, Amity University Haryana	Faculty	50	Dr. S.N. Sridhara	Ann-3
4	Faculty Development Program	10/4/2019	Formulation of COs, POs and PSOs	ACON, Amity University Haryana	Faculty	20	Dr. S.N. Sridhara	Ann-4
5	Faculty Development Program	28/2/2019	Bloom Taxonomy, Formulation of Objectives and Outcomes.	ABS, Amity University Haryana	Faculty	20	Dr Deependra Sharma	Ann-5
6	Faculty Development Program	2/5/2019	Implementation of MOODLE	Amity University Haryana	Faculty	50	Mr Dhiraj/ Dr S.N.Sridhara /Dr Deependra Sharma	Ann-6



Summary of Europe Visit Program

Faculty from AUH: Prof (Dr) Deependra Sharma

EU University: Wroclaw University of Science and Technology

City: Wroclaw

Country: Poland

EU team: Dr. Kamila, Dr Agnizseka, Dr Katarzyna

Date: 18 March to 22 March 2019

➤ **Activities covered during visit:**

Day 1:

- Presentation was made on 'Action Plan prepared' by each participant, Feedback was given by supervisor.
- Presentation was made again after incorporating the feedback received.

Day 2:

- Workshop concerning the Scientific Research Methodology and Writing was organized.
- Publications of each participant were analyzed.

Day 3:

- Team work to prepare a workshop for CBC concerning Scientific Research Methodology and Writing.
- Session was taken for PG students.

Day 4:

- Workshop concerning scenario-based e-learning preparation.

Day 5:

- Experience sharing, worked on portfolio and EVP finalization.
- City Tour.

➤ **Outcomes of Visit:**

- Developed network for collaborative research.
- Learned how to incorporate ICT in pedagogy (like Gamification, Scenario based learning etc).
- Upgraded the knowledge about quality of teaching.



- Identified the best practices adopted at different European universities as well as at host universities.

➤ **Value addition during EVP:**

- Overcoming language barrier in communication.
- Experiencing diversity and inclusion.

➤ **Future plans for making CBC more effective:**

- To create awareness about ACBC within and outside AUH.
- To play active role in establishing and making the ACBC functional.
- Incorporating Gamification into classroom teaching.
- Conducting FDP/ workshop on MOODLE, RM etc for the faculty, students and other stake holders.
- Finalising the need assessment and identifying various topics of training.
- Provide support in enhancing the getting more funded projects.

Faculty Name:- Dr. Vivek Jaglan

Name of European University Visited:- Ghent University, Belgium

Country:- Belgium

EU Team:- Prof. Martin

Date:- 23rd Feb 2019 to 2nd March 2019

Activities covered during Visit:

➤ **Day 1:**

- Sessions about professional development and Problem / issues and their solution in course and session designs.
- Session by Prof. (Dr.) Martin lecture on the live recording and live streaming for remote login students and uses of ICT tools in the lecture.

➤ **Day 2:**

- Delivered a lecture in Ghent University to First Year Students on 'how to teach AI to refugee or Non Native students'.
- Visited Video recording lab.

➤ **Day 3:**

- Workshop about videos – work on portfolio.



➤ **Day 4:**

- Library Visit and Discussion with Dr. Martin about CBC center.
- Visited Skill Labs of Ghent University and understand the advantages of skill lab.

➤ **Day 5:**

- Visited an associated college (HoWest) in Kortrijk.

➤ **Out Come of Visit**

- Understood the system of simulation lab/ Video Streaming Lab
- Delivered lecture (a teaching Session) of gents student to understand the non native language students responses.

➤ **Value addition in you during EVP**

- Understood the Quality Standards / Cycle in term of Teacher-Industry-Student-Research

➤ **Future plans for making CBC more effective:-**

- Setting a Moodle platform and arranging training for all the faculty members.
- Help the faculty members to create their video lecture and assignments and upload it
CBCIN- ICT Platform.

Faculty from AUH: Mr. Akshat Agrawal

EU University: University of Nova, Lisbon

City: Lisbon

Country: Portugal

EU Team: Prof. Patricia Pinto (Pro-Rector)

Date: 24th March 2019 to 29th March 2019

➤ **Activities covered during visit:**

Day 1:

- Interaction with Prof. Patricia Pinto (Pro-Rector) , Interaction with Prof. Isabel (Pro-Rector) and Joana Marques
- Deciding Mutual training contract
- Discussion of the structured and functioning of the NOVA University.
- Discuss that how this European Visiting Program will helpful to set up a capacity building centres at our universities
- Discussion on Transverse skills & its importance
- Discuss many things about Quality assurance and how to maintain the quality of capacity building centre



- Quality measures followed at Nova University, Lisbon

Day 2:

- Interaction with Prof. Virgilio Gruz Machado Dean of Engineering faculty, FCT and Prof. Joao Mourio.
- Brief Introduction of Engineering school & courses
- Discussion of why UN,Lisbon is unique in engineering courses
- Technical session of moodle and perform hands on experience of various useful options
- How to integrate other software into moodle

Day 3:

- Interaction with Prof. Martins and Sara Recharte, Faculty of Social Sciences and humanities and Prof. Roberto Henriques.
- Introduction of functioning of international office of FCSH and the Procedure and policies mobility of students and faculty.
- Discussion on use of data and data analytics in today's scenario.
- Support of information & management school in it.

Day 4:

- Discussion and understanding on international development strategies by Vice – Rector Joao Matos
- Discussion on Knowledge and technology transfer by Vice – Rector Isabel Rocha
- Discussion of easiness of PURE software that is useful for other researchers of parent university and other university as well by-Dr. Tiago Guedes

Day 5:

- Understand Technical pedagogical tools for improving teaching to engineering faculty
- Exchange of idea with faculty of engineering of NOVA university pertaining to recent changes in curriculum.
- Understand how the Capacity building centres run by University of Nova and then how we can implement at our university.

➤ **Value addition during EVP:**

- Understood diversity management amongst different faculties of Nova university.



- Understood the concept of transversal skills needs, developing skill set to each engineering faculty & other.

➤ **Future Plans for CBC more effective:**

- Setting a Moodle platform and arranging training for all the faculty members at the campus for providing ideas to create concerned courses on the platform for reaching effectively to the students.
- Identifying invitation for collaborative project funding from the agencies like UNESCO, EU, and World Bank.

Summary of European Visit Program

Faculty from AUH: Ms. EshaJainiti

Name of European University visited: Frederick University, Nicosia

Country Visited: Cyprus

EU team: Dr. Victoria Pavlou, Dr. ChrysanthiKadji, Dr. Nikoletta Christodoulou

Date: 8th to 12th April, 2019

Activities covered during the five days:

Day 1:

- Presentation was made on ‘Studies & Student Welfare Service’ by Andrea Athanasiou
- A campus tour.
- Portfolio Development was shared by Dr. Victoria.
- Walking Tour in the evening.
- A dinner hosted by the University.

Day 2:

- Presentation on “Research Services” by Mr. Alexis Onoufriou.
- Visit to the library of University of Cyprus.
- Interaction with the President of Frederick University, Ms. Natasha Frederickou.
- My joint session with Prof. Costas Mantzalo taken for PG students.

Day 3

- Visit to Limassol Campus.
- Cultural activities, Visit Ancient Kourion, Limassol Marina Old Limassol town.

Day 4

- Presentation on “Training and examination Center” by Ms. Suzana Andreou.
- Presentation on “Distance Learning Unit” by Ms. Vasso Tembriou.
- Presentation on “Quality Assurance” by Ms. Vasso Peristiani.

Day 5

- Presentation on “Liaison Office” by Ms. Theodora Gioti.



- Presentation on “Erasmus Office” by Mr. Varnavas M. Inaios.
- CBC plan development discussed by Dr. Victoria.

Learning that took place:

- Pedagogy: Subtle dissemination of global issues.
- Collaboration: Working with my supervisor and taking a joint class and networking for collaborative research.
- Diversity: Interacting with faculty from Frederick and other Indian Universities.
- Cultural knowhow.

Value addition in you during EVP:

- Overcoming language barrier in communication.
- Experiencing diversity and inclusion.

Future plans for making CBC more effective:

- Conduct FDPs and training with faculty members and the extended community.
- Conduct training for students.
- Network to procure a project in this area.
- Bring about awareness of the work that CBC is doing to the extended community through media insertions.



INFO DAY CONDUCTED UNDER ERASMUS + CABICIN PROJECT

- ❖ Name of University: Amity University Haryana

- ❖ Type of Info Day organised: Seminar Cum Workshop
Eg. Workshop/Seminar etc.

- ❖ Date of event: 24/4/2018

- ❖ Objective of the Info day:
Best Practices in teaching learning for Student Engagement

- ❖ Participants Details:
 - Number of participants: 100
 - Area of the participants: eg. Academia
 - Group type of participants: Faculties
 - Announcement made through : University Email account
 -

- ❖ **Major highlights of the program:**

Amity University Haryana organized its first InfoDay under the prestigious ERASMUS + CABICIN program on 24 April 2018. The venue for the program was C-214, Smart Class room. The program was attended by around 60 faculty members of AUH. Dr Rumki Bandopadhyay handled the compeering of the event.

The program started with the welcome and inaugural address by Dr Bhavana Adhikari, Project Coordinator, AUH. In her address, she welcomed all the participants for attending the event and thereafter, a brief introduction about what the project is all about was outlined. Then Dr Rumki explained the agenda of the event where she briefly explained the learning outcomes for the audience after attending this event.

Then Mr Ankit Dhamija took over and discussed about MetaPlan activity. The activity's importance was highlighted and the participants agreed that it's a wonderful activity to engage the students actively in the classroom. After the explanation, the participants were involved in an activity based on MetaPlan where a short video was shown to them and one question was put up which they had to answer on colored paper sheets. All participants wrote the answers and those were taken by Mr Dhamija and



discussed and explained and pasted on the whiteboard according to the category it falls in. The activity saw an enthusiastic participation from the participants.

Then, Dr Rumki took over and explained the topic interactive questions where she stressed upon Bloom's Taxonomy. Then Dr Vikas Thada took over and explained the topic Response Technology and used Socrative tool to take response from students about some quiz questions. The participants really enjoyed this activity and felt that it's a wonderful tool to use in classroom with students.

Then Dr Yogesh Patter explained the topic competence video where he emphasized on how creating a competence video can help students in team work and know and improve their competencies.

Then, Dr Anil Kumar concluded the session with his concluding remarks and also answered the queries raised by the audience.

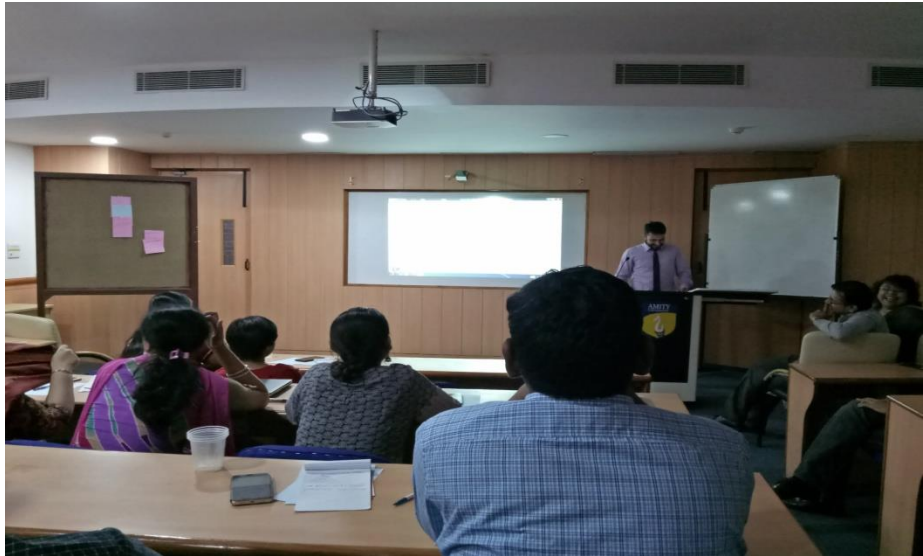
Major outcomes of the event: A brief introduction about what the project is all about was outlined and the participants agreed that it's a wonderful activity to engage the students actively in the classroom

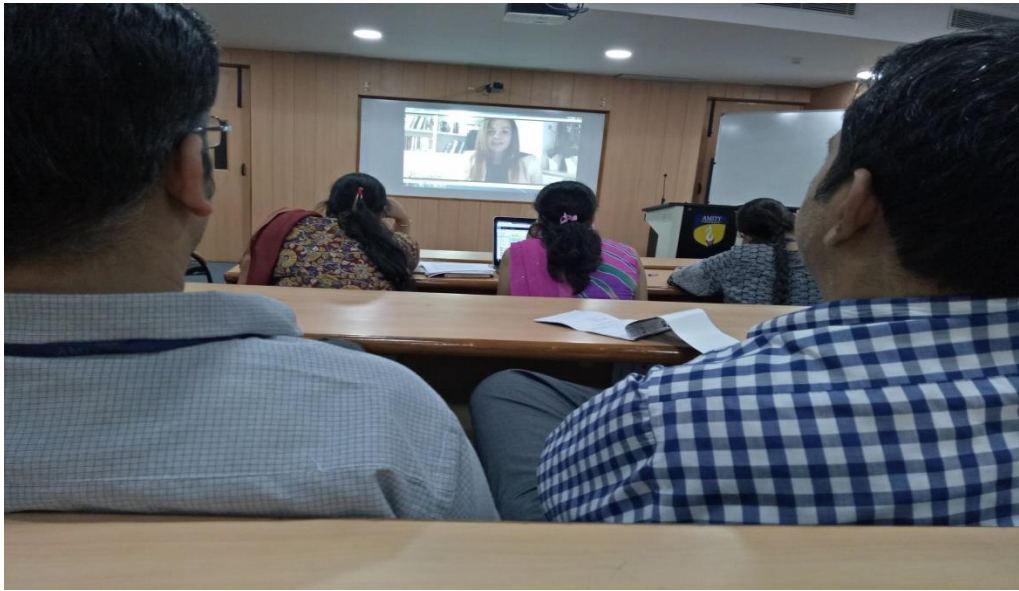
Coordinating person for the event: (Name and contact details)

Dr. Bhavana Adhikari and Dr. Vivek Jaglan from AUH

- **Glimpses of the Program:**

(Photographs)









2nd INFO DAY CONDUCTED UNDER CABGIN PROJECT BY AUH

- ❖ Name of University: Amity University Haryana

- ❖ Type of Info Day Organised: Seminar Cum Workshop
Eg. Workshop/Seminar etc.

- ❖ Date of event: 30/10/2018- Amity University Haryana
1/11/2018- MBLM College of Education, Bilaspur, Gurgaon
3/11/2018- SAITM, Gurgaon

- ❖ Objective of the Info day:
 - a) Best Practices in teaching learning for Student Engagement/Faculty
 - b) To acquaint the audience with the concepts of E-learning and its various variants.
 - c) Knowing Learning Management Systems and its functionalities, various types
 - d) Teaching how to use Moodle as an LMS on local host, cloud and own website.
 - e) To understand creation of courses, adding materials, enrolling of users as student, teacher, adding resources, creating quizzes etc.

- ❖ Participants Details:
 - Number of participants:
40 Participants- Amity University Haryana
82 Participants - MBLM College of Education, Bilaspur, Gurgaon
36 Participants - SAITM, Gurgaon
 - Area of the participants: eg. Academia
 - Group type of participants: Faculties
 - Announcement made through : University Email account/Poster

- ❖ Major highlights of the program:

In Amity University Haryana

The 2nd info day on “E-learning and Moodle” was conducted on 30th Oct 2018 from 10 AM to 4 PM. The resource person was Mr Ankit Dhamija and Dr. Vikas Thada. Inaugral session was



addressed by Mr Ankit who taught and basics of E-learning and its various types with interactive activity based session to fully engage the audience.

The next session was conducted by Dr Vivek Jaglan on LMS and Moodle. The session began with introductory idea of LMS and its capabilities. It then moved to acquiring from Internet and installing on localhost, cloud, and own website. The participants were taught with practical session as to how to create users with student/teacher/manager role, how to create course categories and courses, how to create users and enroll them in your own courses, how to assign/change roles, how to add static material to courses, how to divide courses into sections/weeks, how to create quizzes, how to add questions to quizzes and many other activities.

The response to both the sessions were excellent. The participants really gained a lot and learned by doing.

In SAITM, Gurgaon

The 2nd info day on “E-learning and Moodle” was conducted on 1/11/ 2018 from 10 AM to 4 PM. The resource person was Dr. Vivek Jaglan. In first session the topic was covered- basics of E-learning and its various types with interactive activity based session to fully engage the audience.

The Second session began with introductory idea of LMS and its capabilities. It then moved to acquiring from Internet and installing on localhost, cloud, and own website. The participants were taught with practical session as to how to create users with student/teacher/manager role, how to create course categories and courses, how to create users and enroll them in your own courses, how to assign/change roles, how to add static material to courses, how to divide courses into sections/weeks, how to create quizzes, how to add questions to quizzes and many other activities.

The response to both the sessions were excellent. The participants really gained a lot and learned by doing.

In MBLM College of Education, Bilaspur, Gurgaon

The 2nd info day on “E-learning and Moodle” was conducted on 3/11/ 2018 from 10 AM to 4 PM. The resource person was Dr. Vivek Jaglan. In first session the topic was covered- basics of E-learning and its various types with interactive activity based session to fully engage the audience.



The Second session began with introductory idea of LMS and its capabilities. It then moved to acquiring from Internet and installing on localhost, cloud, and own website. The participants were taught with practical session as to how to create users with student/teacher/manager role, how to create course categories and courses, how to create users and enroll them in your own courses, how to assign/change roles, how to add static material to courses, how to divide courses into sections/weeks, how to create quizzes, how to add questions to quizzes and many other activities.

The response to both the sessions were excellent. The participants really gained a lot and learned by doing.

Learning Outcomes (LO):

Learning Outcomes	Contents
LO 1: To comprehend the concept of E-learning and learning management system (LMS)	Understanding E-learning, Learning Management System(LMS),m-learning, need and benefits., methods, contents- E-learning Tools
LO 2: To demonstrate the use of Moodle from student/teachers perspective.	Application and benefits of Moodle.
LO 3: To implement Moodle installation through various methods	Installation of Moodle on free sites, on personal computer/laptop and webserver online,
LO 4: To design and implement various courses and different rights and permissions.	First interaction with Moodle: editing mode, resources and activities, configuring website, creating categories and courses, enrolling teachers and students, adding static course materials. adding interaction with lessons, assignments, evaluating students with quizzes, choices, and feedback.

Activities to be conducted



EA1: Online search for 10 best LMS and various organizations /universities using them

EA2: Creating your moodle account and site on local host

EA3: Search various sources from you can get Moodle installer for local hosting.

EA4: Installing Moodle on local host

EA5: Installing Moodle on domain hosting

EA6: Getting familiar with Moodle

EA7: Designing and developing categories and courses

EA8: Adding users and assigning roles to them

EA9: Enrolling users into various courses

EA10: Adding various activities in your courses

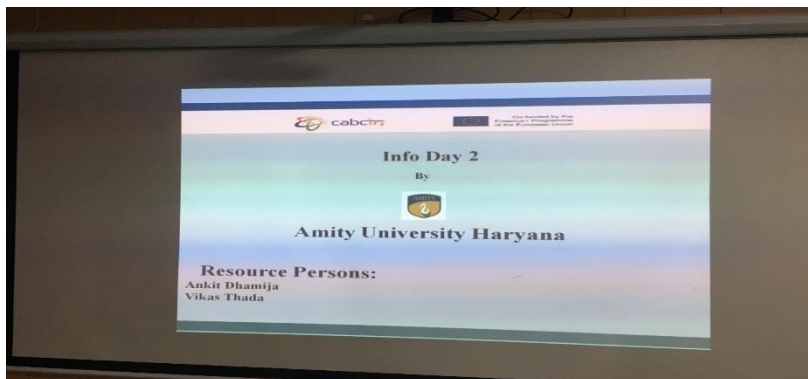
Coordinating person for the event: (Name and contact details)

Dr. Bhavana Adhikari and Dr. Vivek Jaglan from AUH

- **Glimpses of the Program:**

(Photographs)

Amity University Haryana







In MBLM College of Education, Bilaspur, Gurgaon





In SAITM, Gurgaon







REPORT on Module I -TTT: Developing E-learning Courses and Activities(AUH)

(Dissemination Report under CABGIN)

Name of University:-Amity University Haryana, India

Type of activity:

- **Training: -Module I -TTT: Developing E-learning Courses and Activities**

Period of activity:

- **From -28/11/2017 to 01/12/2017**

Participating Universities:

- Amity University Haryana
- SAL Education Campus
- North Maharashtra University
- Wroclaw University(WUST), Poland

Participants:

- **Role: Trainee** (From AUH,SAL,NMU) **Trainer** from Wrocław University of Science and Technology, Wrocław, Poland
- **Name and details (mail address)**

Amity University Haryana

1. Dr. Yogesh Kumar (email id:- ykumar@ggn.amity.edu)
2. Mr. Anil Kumar(email id:- akumar2@ggn.amity.edu)
3. Mr. Ankit Dhamija (email id:- adhamija@ggn.amity.edu)
4. Dr. Vikas Thada (email id:- vthada@ggn.amity.edu)
5. Dr. Rumki (email id:- rbandyopadhyay@ggn.amity.edu)

North Maharashtra University:

1. Madhulika A. Sonawane
2. Manish R. Joshi
3. Ramchandra P. Bhavsar
4. Anil P. Dongre
5. Bhushan L. Chaudhari



SAL Institute of Technology & Engineering Research:

1. Priyam Parikh
2. Ravi Raithata
3. Rekha Devi Patel
4. Harshit Bhuvsur
5. Manishkumar Patel

Objective of the Program:

The purpose of this activity to train the trainer in developing the e-learning courses, activities and effectively use an e-learning platform in teaching.

Program Details:

In days 28th November to 1st December 2017 first module of the Train-The-Trainer program had been conducted in Amity University Haryana, India for the selected participants from AUH, NMU & SAL. The course titled 'Developing e-learning courses and activities' delivered by the trainer from WUST. Trainees had learned how to plan and develop e-learning courses and activities, how to effectively use an e-learning platform in teaching and, how to set the roles and create various activities, share online courses with multimedia, tasks, and quizzes.

Other Details:- Venue: LAB 4, C- BLOCK, AUH

Participation: Total Participant -15

- No. of Faculty Members From AUH: 05
- No. of Faculty Members From NMU: 05
- No. of Faculty Members From SAL: 05

- **Type of Program: Training under Module 1**
- **Trainer:** Prof.(Dr.) Marcin Głowacki (Wrocław University of Science and Technology, Wrocław, Poland)
- **Brief content of Training Program:** It was an extremely informative activity and it help the participants to improve the quality of higher education, developing



new and innovative education programmes, modernising higher education systems. Basic contents of the module training-

- Develop E-learning Courses
- Effectively use an E-learning Platform in Teaching
- Share Online Courses with Multimedia, Tasks, and Quizzes

Major Outcomes:- Participants had learned- how to plan and develop e-learning courses and activities, how to effectively use an e-learning platform in teaching and, how to set the roles and create various activities, share online courses with multimedia, tasks, and quizzes.

- **Next course of action:-** Module II in SAL
- **Coordinating Person of the Program:**

Dr. Bhavana Adhikari and Dr. Vivek Jaglan from AUH

- **Glimpses of the Program:**
(Photographs)









Module-III-Interactive Instructional Strategies in Higher Education (AUH)

(Dissemination Report under CABGIN)

Name of University:-Amity University Haryana, India

Type of activity:

- **Training: - Module-3-“Interactive Instructional Strategies in Higher Education”**

Period of activity:

- **From -16/01/2018 to 19/01/2018**

Participating Universities:

- Amity University Haryana
- Parul University
- Ghent University, Belgium

Participants:

- **Role: Trainee** (From AUH,PU) **Trainer** from Ghent University, Belgium
- **Name and details (mail address)**

Amity University Haryana

1. Dr. Yogesh Kumar (email id:- ykumar@ggn.amity.edu)
2. Mr. Anil Kumar(email id:- akumar2@ggn.amity.edu)
3. Mr. Ankit Dhamija (email id:- adhamija@ggn.amity.edu)
4. Dr. Vikas Thada (email id:- vthada@ggn.amity.edu)
5. Dr. Rumki (email id:- rbandyopadhyay@ggn.amity.edu)

Parul University:

1. Trilokkumar Akhani
2. Aniruddha Tambe
3. Hirai Gaud
4. Dr.Falguni Acharya
5. Harshal Shah



6. Nelvin Vadakkut
7. Dr. Manisha Pathak
8. Pradyumansinh
9. Dr. Suhasini Kulkarni
10. Dr. Preeti Nair

Objective of the Program:

The purpose of this activity to train the trainer on “Interactive Instructional Strategies in Higher Education” and pointed on need of the hour for the teaching fraternity to “Stop Teaching and Make the students work”.

Program Details:

Day one of the training program was emphasized on “Meta Plan and Interactive Questions” wherein the participants were involved in multiple activities such as poster presentations, role plays and individual presentations. Day one concluded with a roadmap on the systematic approach on the process student learning groups contributing and participating while the teacher being the facilitator and heading the student’s team with shared understanding and shared commitment. The participants were also instructed to develop a Metaplan on their own course at the University that may be used for the Curriculum based on the input provided by the Instructor and submit the same at the Online Portal of ERASMUS+ CABICIN.

Day two began with an interaction on a quick recap of the previous day session learning outcomes on the theme “Meta Plan and Interactive Questions”. The participants actively participated on the responses to the questions raised by the instructor. Moving forward, the instructor emphasized on the themes, “Competency Video, Video Assessment and Peer Assessment”.

The Instructor discussed on the importance of Script that may represent a competence among the learners. The focus on this session was to create a videoclip that reflected the mastery of the script among the participant groups. The pedagogy involved role play with a demonstration of “LIVE” demonstration of participants in writing the script and active participation in the form of “Role Play” that had been recorded for further feedback on the same to the participants. The



instructor concluded on the socio motivational elements to develop competence. This element also sufficed the theme on Video Assessment.

The instructor made the participants comprehend from a technology point of view, different topics that may be addressed on the tools that may be used to develop a video. He focused on the multiple processes that could lead to make videoclips. The instructor demonstrated the explanation with an example that emphasized on preparation, scripting and editing with a video-editing package. The theme concluded with demonstration of the concepts such as Perception, Interpretation and Decision making with an explanation to help and assess the mastery of a competence. The day two concluded with a roadmap on the theme of “Peer Assessment” while the instructor focused very specifically on the need of establishing peer assessment to the nature of interactive learning. He accentuated on designing and developing rubrics to support peer assessment that may lead to involvement of the students. The participants in process of discussion could develop ideas that may be developed as a prerequisite on the peer assessment skills amongst the students.

Day three began with an interaction on a quick recap of the previous day session learning outcomes on the theme “Competency Video, Video Assessment and Peer Assessment” The participants actively participated on the responses to the questions raised by the instructor. Moving forward, the instructor emphasized on the themes, “Collaborative Learning, Peer Tutoring and Flipped Classroom”.

The instructor demonstrated an exemplified teaching and learning both from a theoretical and empirical point of view, group work that is often used as a conceptual alternative for collaborative or cooperative learning. This indeed is potentially a successful Interactive Learning strategy. The key of this theme is to avoid the pitfalls. The instructor addressed the group of participants the two types of scripts that is distinguished as epistemic scripts and collaboration scripts, this was demonstrated as a focus on collaborative learning as a systemic part of a teaching and learning process. The instructor had linking this to Bloom's revised taxonomy while the focus with an approach towards collaborative learning on behavioral levels starting from the "application" level. Further to this, the instructor emphasized on the Evaluation and feedback that is indeed critical and is a part of the group task/script/structure.



Following the first theme of the day, the instructor discussed on developing peer tutoring as an interactive learning approach. This practice deployed by the tutor may be engaged as a process of an extension to collaborative teaching and learning. The day three concluded with the need of “Flipped Classroom” wherein the tutors may deploy a blended teaching and learning strategy with deployment of Printed textbook, web based lecture (online), guided questions (Classroom) and the importance of immediate feedback for the benefit of the students.

Day four began with an interaction on a quick recap of the previous day session learning outcomes on the theme “Competency Video, Video Assessment and Peer Assessment” The participants actively participated on the responses to the questions raised by the instructor. Moving forward, the instructor emphasized on the themes, “Collaborative Learning, Peer Tutoring and Flipped Classroom”.

The instructor emphasized on the feedback that may be deployed to the students for an enriched teaching and learning experience. He also emphasized on the differentiation of “Feedback”, “Feed UP” and “Feed Forward”. The instructor deployed on the pedagogical tools that may be focused on the learning orientation through feedback to the students.

Other Details:- Room No-C214, C- BLOCK

Participation: Total Participant -15

- No. of Faculty Members From AUH: 05
- No. of Faculty Members From PU: 10

- **Type of Program: Training under Module III**
- **Trainer:** Prof.(Dr.) Martin Valcke (Head of the Department of Educational Studies, Ghent University, Belgium)

Brief content of Training Program: It was an extremely informative activity and it help the participants to understand the design principles, such as: problem based learning, case based learning, competence-based education, research based learning, entrepreneurial learning and community service learning that may be an integral part of the curriculum as a sequence of learning activity. Topic covered in this training-

- Meta Plan
- Interactive Questions



- Competitive Video and Video Assessment
- Peer Assessment and Collaborative Learning
- Peer Tutoring and Flipped Classroom
- Power of Feedback
- Curriculum Design

Major Outcomes:- Participants had learned- “how to develop a blueprint as a guide for a program and course level curriculum and building on Bloom's revised taxonomy that is defined for the benefit of the students teaching and learning to “DO” with a particular content development activity”.

- **Next course of action:-** Module IV in RKU
- **Coordinating Person of the Program:**

Dr. Bhavana Adhikari and Dr. Vivek Jaglan from AUH

- **Glimpses of the Program: (Photographs)**









AMITY UNIVERSITY HARYANA



LEED Platinum Certification

Amity University Haryana campus has been rated as the highest Platinum Award in Leadership in Energy and Environmental Design for the Existing Building Operation & Maintenance category (LEED EB O&M) by United States Green Building Council (USGBC) and Green Business Certification Inc. (GBCI). It is a rare distinction for a University category as Amity University Haryana became the first University in India and second only in Asia to be awarded with such a prestigious distinction in existing building categories for operation and maintenance.

AUH enjoys the lush green campus with the highest credits points required for Platinum certification with a high score for energy and water conservation. The rating truly has demonstrated the Leadership in Energy and Environmental Design of the AUH campus. Amity University Haryana Campus, which is certified as LEED PLATINUM for its green building design, operation, and maintenance, the highest rating provided by LEED (Leadership in Energy and Environmental Design), USGBC (US Green Building Council) in June 2017; very first educational Institute building in India and 2nd only in Asia.



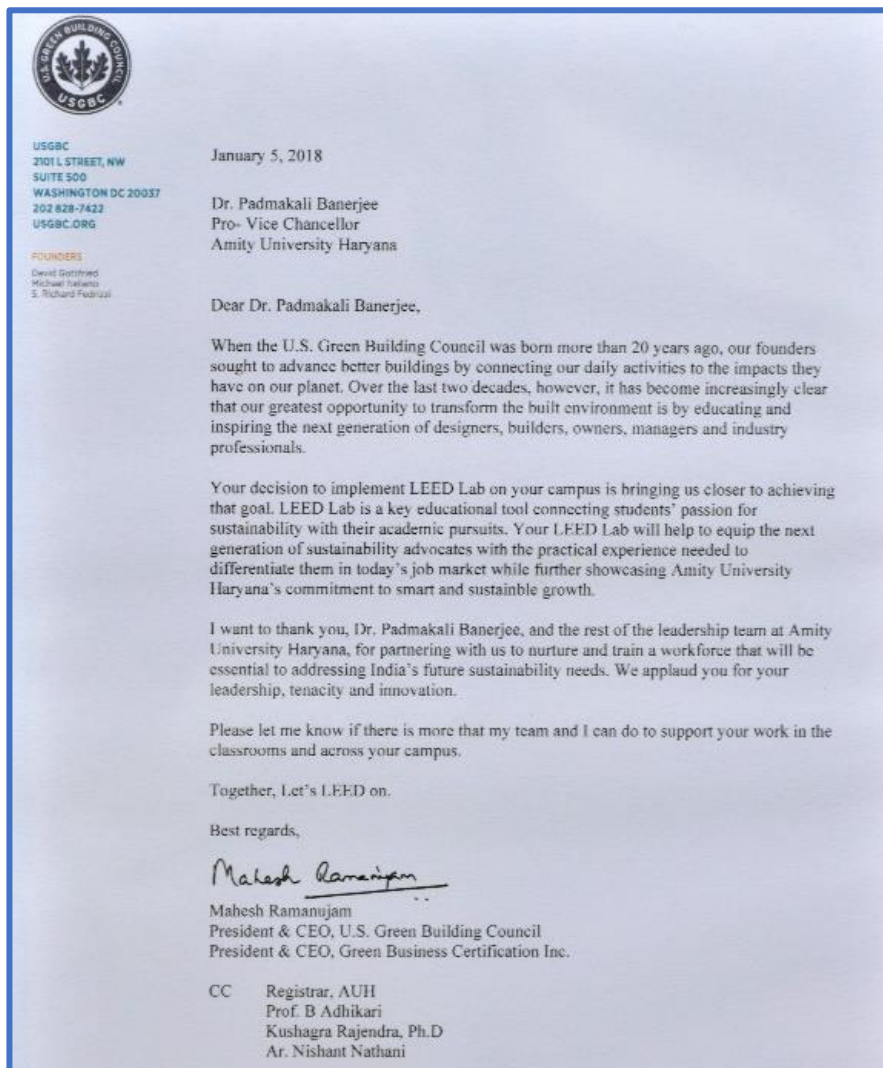
(Panoramic view of Amity University Haryana)



LEED Lab

Amity University Haryana being a leader in education has expanded his vision towards the sustainable and green building construction. The Amity approach of education is to prepare students for 21st century careers by delivering competency-based education and innovative solutions by preparing the industry-based syllabus and curriculum..LEED Lab is an initiative by the Amity University Haryana in partnership with the United States Green Building Council Inc.

The LEED Lab curriculum equips students from Architecture, Planning, Sciences & Engineering and Environmental Science background to study various aspects of Green Buildings design, operation and maintenance, and evaluate Green Building certification process on the range of parameters including energy efficiency, water efficiency, sustainable sites, transportation systems etc. Visionary chancellor Dr. Assem Chauhan had set a goal to start the LEED lab. Prof. (Dr) Padmakali Banerjee Pro Vice Chancellor had taken this work forward. The Leadership in Energy and Environmental Design knowledge and skillsets have been beneficial to the prospective students.





LEED Lab is an approach to not only teach but practice the policy to make student market ready, so that student can, not only understand the technical detail of green building parameters but also able to carry out certification in real real term. The setting up of LEED Lab-- an interdisciplinary curriculum run by the AUH's experienced faculty, USGBC and GBCI; very first of its kind in Indian University system. The First batch of the LEED Lab has been successfully completed under leadership of team of interdisciplinary faculty members from Architecture, Planning, Engineering and Environmental Sciences under lead Dr. Kushagra Rajendra. The LEED Lab curriculum and allied activities completed by the 41 Students from the AUH's Architecture, Engineering and Environmental Sciences shows student interest and environmental stewardship in first batch of 2018, while 37 students are undergoing for course work in batch of 2019. The curriculum has also provided the students with the industry exposure and practical knowledge that is required in their respective career.

Some success stories of the students have reflected the effectiveness of LEED Lab curriculum. It is observed that the student who had completed the immersive LEED Lab program have been accepted in the various well-known organizations. Due to their acquired *know-how knowledge* and new industrial skills in LEED green building certification process, students were accepted in the design and management consulting companies. The students were interested to pursue and qualify for higher professional accreditation available with the USGBC and demonstrate enhanced knowledge. The AUH and USGBC team have been supportive in their journey and successive accomplishments.



LEED Lab Team

- Kushagra Rajendra, P. (Team Lead)
- Prof. Ila Gupta

Administration:

- Prof. (Dr.) Bhavana Adhikari
Dy. Dean, Academics
Amity University Haryana
- Mr. Ravish Dhingra
OSD
Pro Vice Chancellor Office
Amity University Haryana

Chairperson:

Prof. (Dr.) Padmakali Banerjee
Pro Vice Chancellor
Amity University Haryana

Eligibility:

UG/PG in Architecture, Planning, Civil Engineering, Environmental Sciences, Environmental Engineering and related disciplines

Course Manual: LEED LAB

Subject : LEED Lab	Credits: 3
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Course Overview

Course Objective: LEED Lab is an attempt to train students for green building concepts and inculcate required skills for understanding of different aspect and parameters related to green building certification process. The teaching methodology is based upon, basic understanding of green building, followed by LEED requirements and processes of obtaining the LEED certification added with field/building based activities. Pedagogy is designed in a manner to utilize ICT tools to widen subjects understanding in an interactive manner. The curriculum is prepared in a way to give equal weightage to both theory and practical with adoption of continuous assessment through entire course period. Modules are planned to incorporate at least one live/casebased demonstration as per requirement of LEED certification.

Learning Outcomes:

This course is designed to produce the following outcomes:



1. The student will be able to understand the technical aspects of green building, and national and international certification frameworks.
2. Student will able to assess and explore techniques to improve building exterior, site, water, energy consumption, remodeling, waste management, and procurement of materials for green building.
3. Recognize how improving building operation and maintenance lead to higher performance in green buildings.
4. Understand green building certification: pre-requisites, credits and the tools needed for implementation, and recognize synergies between multiple credits with special reference to LEED-EB: O+M
5. Students' ability to assess the performance of existing buildings and facilitate LEED for Existing Buildings: Operations and Maintenance (LEED EB: O+M) (through Arc performance pathway) process with the goal of certifying the facility such as registration, submission, and LEED online interface, will be strengthened.
6. At the end of the semester the students are prepared to appear for the LEED professional credential (i.e. LEED Green Associate and/or LEED Accredited Professional).

Course Plan:

The syllabus is well demarcated among ten different modules to cover basic concepts of green building with special emphasis on LEED certification for O & M (Existing Building). Each module is designed to cover fundamental information, followed by LEED requirements and practical activities such as site data collection and analysis, field visits, documentation and existing building based projects under heading of LEED live.

S.No.	Modules		Lectures Hours
1.	Module I	Introduction to Green Building	3
2.	Module II	Green Building Rating Systems	2
3.	Module III	LEED Lab and Processes	5
4.	Module IV	Site, Location and Transportation	3
5.	Module V	Material and Resources	3
6.	Module VI	Energy and Climate	5
7.	Module VII	Water Efficiency/Environment	4
8.	Module VIII	Indoor Environment & Human Comfort	3
9.	Module IX	LEED Arc Platform	5
10	Module X	Project Communication	3



Assessment and evaluation

Based upon interactive pedagogy, students are engaged in the continuous teaching-learning environment for an entire course period, including classroom lecture, discussions, guest lectures, field visit, outdoor activities, quiz and tutorials. Hence the evaluation is based upon their performance in every learning activity designed for the course curriculum.

Component Code	CA	PE	A	EE
Weightage Planned (%)	20	25	5	50

(CA: Class Activity , PE: Project Evaluation, A: Attendance, EE: External Examination)



SESSION PLAN: LEED Lab

Total No Sessions - 36

Module	Content	LEED Live	Lecture Hours
Introduction to Green Building	<ul style="list-style-type: none"> • Introduction to Course, Syllabus and assessment • Fundamental concepts of Green Building Design and Sustainability 	<ul style="list-style-type: none"> • Home Assignment: Importance of Green Building and its benefits • Comparison of green and conventional building 	3
Green Building Rating Systems	<ul style="list-style-type: none"> • Green Rating regime and their scope (regional and global) • Policies and legislations 	<ul style="list-style-type: none"> • Case study: Different rating systems • Green building Operations Guide • Field visit: Any green certified building 	2
LEED Lab & Processes	<ul style="list-style-type: none"> • LEED Systems: Organization, fundamentals & Role USGBC/GBCI • Structure of LEED rating (credit, prerequisites and requirements) and Impact categories • LEED Certification & registration process • What, How and where to collect data for LEED certification 	<ul style="list-style-type: none"> • Survey format and questionnaire • Physical case study: existing LEED certified building • File preparation for a LEED project (Registration document collection) • Quiz 	5
Site, location and Transportation	<ul style="list-style-type: none"> • Scope and criterion of sustainable site. • Transport and resource footprint 	<ul style="list-style-type: none"> • Transport survey (Origin-Destination, Parking, mode of transport) • Group discussion on site suitability (site: AUH Campus) 	3
Material and Resources	<ul style="list-style-type: none"> • Fundamental concepts (LCA, Waste management, 3Rs and Health) • Procurement, declarations and documentations of Materials according to requirement of LEED certification 	<ul style="list-style-type: none"> • Tutorial: bills, collection and calculations of Material in resources in building 	3



<p>Energy and Climate</p>	<ul style="list-style-type: none"> • Basic concepts I (Building loads, Energy efficiency, Environmental concerns) • Basic concept II (Electrical systems, Visual & thermal comfort and other concepts) • Energy commissioning & performance management • Energy audit process, equipment and tools 	<ul style="list-style-type: none"> • Team exercise 1: Data collection, reporting, preparation of site energy audit • Team exercise 2: Comparison between Design based report (DBR) and Performance based report (PBR) • Field visit: LEED certified building 	<p>5</p>
<p>Water Efficiency/Environment</p>	<ul style="list-style-type: none"> • Water use pattern, source and conservation scope (including water harvesting and treatment) • Water flow, fixtures and plumbing networks and water efficient appliances • Water Audit: Performance management and monitoring • LEED requirement and documentation plan 	<ul style="list-style-type: none"> • Tutorial: water based calculations for LEED pre-requisites • Team exercise: Data collection, reporting, preparation for Water audit • Field exercise: Visit to STP for data collection (Site: AUH) 	<p>3</p>
<p>Indoor Environment & Human Comfort</p>	<ul style="list-style-type: none"> • Fundamentals of Indoor environmental quality (ventilation, air quality, indoor emission, green cleaning) • Health and occupational comfort (Natural lighting, Thermal, Quality view & assessment-survey) 	<ul style="list-style-type: none"> • Project based assessment of existing building • Class activity: Micro-climate improvement scope and use of instruments to monitor air quality 	<p>3</p>
<p>Arc Platform: Data collection for LEED certification</p>	<ul style="list-style-type: none"> • Basic concepts and pre-requisites. 	<ul style="list-style-type: none"> • Outdoor activity: live ARC interface • Team Activity: Working on live interface by uploading data 	
<p>Project Communication</p>	<ul style="list-style-type: none"> • Environmental/Building codes • Impact of built environment, sustainable & regional design • Project Documentation follow up 	<ul style="list-style-type: none"> • Class quiz: Building codes • Project Report: Comparison and compilation of all case studies 	<p>4</p>



Readings

1. Energy-efficient buildings in India. The Energy and Resources Institute (TERI), 2001
2. GRIHA MANUAL: Five volume set, The Energy and Resources Institute (TERI), 2011
3. Green Building: Guidebook for Sustainable Architecture, Sringer, ed 2010
4. Green Building A to Z: Understanding the Language of Green Building, New Society Publishers, 2007
5. U.S. Green Building Council. Green Building and LEED Core Concepts Guide. 3rd Edition. U.S. Green Building Council, 2014.
6. U.S. Green Building Council. Introductory and Overview Sections. LEED Building Design + Construction Reference Guide. v4 Edition. U.S. Green Building Council, 2013.
7. U.S. Green Building Council. LEED Operations and Maintenance Reference Guide. v4 Edition. U.S. Green Building Council, 2013.
8. Green Building Incentive strategies, US Green Building Council 2014
9. US Green Building Council LEEDv4 for operations and maintenance checklist. US Green Building Council, 2013
10. U.S. Green Building Council. LEED v4 Impact Category and Point Allocation Process, Overview. U.S. Green Building Council, 2013.
11. LEED Online: Register a project. US Green Building Council 2014
12. "Rating System Selection Guidance" U.S. Green Building Council 2014
13. U.S. Green Building Council. LEED v4 User Guide. U.S. Green Building Council, 2013.
14. U.S. Green Building Council. Guide to LEED Certification: Commercial. U.S. Green Building Council, 2014.
15. "Rating System Selection Guidance." U.S. Green Building Council, 2014.
16. "Addenda Database." U.S. Green Building Council.

LEED Lab: Onboarding



Institution: Amity University Haryana

1. Institution:

Institution	Amity University Haryana, Manesar, Gurgaon
Location	Manesar, Gurgaon, India
LEED Lab Instructors (Name/E-mail)	Kushagra Rajendra, Ph.D (krajendra@ggn.amity.edu) (Team Lead) Ar. Nishant Nathani (nnathani@ggn.amity.edu) Ar. Geetika Verma (gverma@ggn.amity.edu) Ar. Arun Bhandari (abhandari@ggn.amity.edu) Er. Hardik Saxena (hsaxena@ggn.amity.edu) Dr. Praveen Kumar (pkumr1@ggn.amity.edu) Ar. Meghna Vij (mvij@ggn.amity.edu)
Start and end date of class	20 January- 4 May, 2018
When does the class take place (day/time)	Friday/(2-5 PM)
# of students enrolled	Enrollment planned between 5-15 January 2017
Disciplines represented (majors)	Architecture, Planning, Civil Engineering, Environmental Sciences, Environmental Engineering
Level of students (undergrad/grad)	Under Graduate and Post Graduate
Project Name	Amity University Haryana , Academic Block - D
Is the project registered? If yes, provide the project ID. If no, when do you expect to register the project with GBCI?	Under Process The financial approvals for registration of the project expected by 2 nd week of January 2018. Academic Block D shall be registered before 31 January 2018.
Is the project previously certified under LEED?	Academic Block D is not previously certified. However academic blocks A, B and C are LEED Platinum certified.
Will the project pursue a <u>Performance Score</u>?	Yes Arc Performance platform shall be used to assess performance and achieve LEED EB.



2. Provide the XXX logo for the [USGBC website](#) – formats we can accept include AI or /EPS, JPEG or PNG



3. Send the final Syllabus when ready. Please confirm if the institution is amendable to having USGBC offer the syllabus as an example for prospective institutions.

Attached / No

4. Please confirm who the Recognition Letter should be addressed to and who should be cc'd on the letter/e-mail. If there is a school or department that should be acknowledged in the letter please provide details. See attached example letter.

Dr. Padmakali Banerjee

Pro- Vice Chancellor

Amity University Haryana

Email : padmakali@ggn.amity.edu

CC : Registrar, AUH registrarauh@ggn.amity.edu

Prof. B Adhikari badhikari@ggn.amity.edu

Kushagra Rajendra, Ph.D - krajendra@ggn.amity.edu

Ar. Nishant Nathani - nnathani@ggn.amity.edu



LEED LAB is a joint initiative between Amity University Haryana and Green Business Centre, Inc., USA. The LEED LAB intends to create a contemporary, innovative and industry-relevant education program for the promotion of sustainable building for students and professionals. At Amity University Haryana, School of Earth and Environmental Sciences, Civil Engineering and Architecture & Planning has initiated the LEED lab, under the guidance of Pro-VC Dr. Padmakali Banerjee. At the maiden launch of the Lab on January 5, 2018, first of its kind in any university of India, a well-designed syllabus, has been taught to student by using various pedagogical tools such as audio-visual communication, field visits, studio and home-based assignments.

Due to the introduction of a new LEED LAB education based on the GREEN BUILDINGS practice, it is important to keep the track of the syllabus and ensure the effectiveness of the educational program delivery. We would like to highlight the following key major activities, processes utilized and an outcome in the delivery of this unique program, discussed in the monthly report.

Teaching methodology

LEED LAB is a multidisciplinary curriculum and due process has been considered in the delivery of the program. We have identified the experts and interested faculty to deliver the core modules as per the planned lecture hours. All selected faculty members across various discipline including Earth & Environment, Architecture & Planning and Civil engineering undergone training session at GBCI for skill enhancement. Based upon expertise respective LEED LAB module has been assigned among faculty members. There are 10 Modules dedicated to LEED LAB, following table shows the faculty wise distribution and course plan along with date-wise schedule.

The total numbers of students participated in the LEED LAB curriculum were 41 in first batch and 37 in second batch from different streams including Architecture, Planning, Civil, Earth Science. Whatsapp group has been created among student and faculty for easy communication, task assignment and progress monitoring. Group of students include of students from Earth Science, Architecture and Civil engineering discipline play pivotal role in interdisciplinary learning. The respective faculty members have been given the responsibility to maintain the attendance record and internal assessment of their respective module.



LEED Lab Faculty

2017-18	2018-19
Mr. Nagesh Gupta, LEED Lab Coach, GBCI Dr. Kushagra Rajendra, ASEES, AUH Ar. Geetika Verma, ASAP Ar. Meghana Vij, ASAP Ar. Arun Bhandari ASAP Ar. Salonee Chadha, ASAP Dr. Kmud Dhanwantri, ASAP Dr. Nitish Kumar, ASAP Er. Shakshi Gupta, ASET Er. Ankit Batra. ASET Asst. Prof. Shruti Kakra, ASET Dr. Puja Singh Ms.Honey Jalali, ASAP Dr. Deepika Pandey, ASEES Dr. Puja Singh, ASEES Dr. Praveen Kumar, ASEES	Mr. Nagesh Gupta, LEED Lab Coach, GBCI Dr. Kushagra Rajendra, ASEES, AUH Ar. Geetika Verma, ASAP Ar. Meghana Vij, ASAP Mrs. Kmud Dhanwantri, ASAP Mr. Nitish Kumar, ASAP Er. Shakshi Gupta, ASET Er. Ankit Batra. ASET Er. Shruti Kakra, ASET Dr. Puja Singh Dr. Deepika Pandey, ASEES Dr. Puja Singh, ASEES Dr. Praveen Kumar, ASEES

S.No.	Modules		Lectures Hours
1.	Module I	Introduction to Green Building	3
2.	Module II	Green Building Rating Systems	2
3.	Module III	LEED Lab & Processes	5
4.	Module IV	Site, Location and Transportation	3
5.	Module V	Material and Resources	3
6.	Module VI	Energy and Climate	5
7.	Module VII	Water Efficiency/Environment	4
8.	Module VIII	Indoor Environment & Human Comfort	3
9.	Module IX	LEED Arc/Live	5
10	Module X	Project Communication	3



LEEE Lab Report 2017-18

Branch	Student
ASAP	AHMED IMTIAZ BARLASKAR
ASAP	NIHARIKA AGARWAL
ASAP	LAISHRAM DAYAVATI DEVI
ASAP	MICHAEL V PACHUAU
ASAP	HEMA GOYAL
ASAP	SHIVANI
ASAP	PUNYA VATS
ASAP	NAMRATA JINDAL
ASAP	MD SOHAIL KHAN
ASAP	HARSH PANGHAL
ASAP	MANVENDER SEHGAL
ASAP	DINESH KUMAR
ASAP	YATIN
ASAP	DIVYANSHU SINGH
ASAP	LATIKA MALIK
ASAP	MAHEEMA SOOD
ASAP	ANKIT SHARMA
ASAP	UMANG GARG
ASAP	RITAMBHRA RAWAT
ASAP	ABDULLAH RASHID
ASAP	NITISH KUMAR
ASAP	ABHIJIT SINGH RAGHAV
ASAP	ANKIT PRIYA
ASAP	ANKIT YADAV
ASAP	MUFTI JIBRAYEEL
ASAP	PIYUSH ARORA
ASAP	KAMINI CHAMOLI
ASAP	VIKRAM BURMAN
ASAP	S RAGHU CHARAN
ASAP	SHIVANGI GUPTA
ASAP	KOVID DOGRA
ASAP	AMAN SINGH TOMAR
ASAP	BATTU NICKSON SAMUEL
ASAP	LARAIB RAHMAN
ASAP	NUPUR
ASAP	AMIT KUMAR
ASAP	ASHISH RAGHURAJ
Earth Sc.	SUBHASH TIWARI
Civil Eng	C.HEMANTH KUMAR
Civil Eng	K.J. SAI KRISHNA

LEED Lab Batch: 2018-19



Brach	Students
B.ARCH	SINGHAL
B.ARCH	ANURADHA
B.ARCH	MEGHALI DAS GUPTA
B.ARCH	VIKRANT VERMA
B.ARCH	KRISHNA GUPTA
B.ARCH	SIMRAN YADAV
B.ARCH	PUNEET KAUR
B.ARCH	SHIKHAR SINGH
B.ARCH	ARUN GUPTA
B.ARCH	ABHINAV POKHRIYAL
B.ARCH	ROHAN SINGHAL
B.ARCH	BHARAT CHAWADA
B.ARCH	HARSH
B.ARCH	RHYTHAM
B.I.D	GRACY FERNANDES
B.I.D	SIMRAN RATHI
B.I.D	TUSHAR SAINI
B.I.D	AKASH YADAV
B.I.D	NIKHIL
B.I.D	ANIL KUMAR
B.I.D	VAKIL AHMED
B.I.D	DIKSHA JADON
B.ARCH	SALONI
B.TECH (ME)	ABHINAV DESHWAR
B.TECH (ME)	NITISH NANDA
M.TECH, STRUCTURE	AKASH VASHISHT
M.TECH, STRUCTURE	DEVANSHU MEHRA
M.TECH, STRUCTURE	VISHNU J PILLAI
B.TECH (CE)	SAHIL AHMED RESHI
B.TECH (CE)	ROBIN SAINI
B.TECH (CE)	LAKSHYA KUMAR DAHIYA
B.TECH (CE)	MOHIT KUMAR GUPTA
M.TECH, STRUCTURE	KARTHIKA A.
M.TECH, CTM	AHMAD NAVEED
B.Sc Earth Science	SOUVIK MAHATO
B.Sc Earth Science	IPSITA DAS
B.Sc Earth Science	UNNATI DALELA



Course Outcome

The LEED LAB modules have been successfully conducted as per planned strategy. The respective faculty had actively engaged the students in sessions as per scheduled plan. Following are the outcomes:

Sr. No	OUTPUT
1	The LEED LAB module has balanced to include the basic concepts of LEED Green Building certification process and know-how knowledge.
2	Introduced to the LEED Credits, Criterion, Project Intent and Design Strategies
3	All Assignments has been submitted and accordingly evaluated
4	Class Test 1 & 2 were conducted successfully
5	Student has performed Data Collection in the minimum energy performance survey within classrooms, documented energy audit processes, and calculated the energy consumptions
6	Value addition among students for taking up LEED certification as Green Associate in future.

Internal Assessment

Following is the List of Questions for the Home Assignments and Class Test that was conducted based on the LEED Lab modules:

1) Group Submission- 1

Case Study on Existing Green Building Features of Amity University

Students were required to select existing certified green building and prepare the report based on the Operation and Maintenance criterion of LEED EB rating category.

2) Home Assignment- 1

-Questions:

a) What are the Green Buildings? Give examples of green buildings in India.



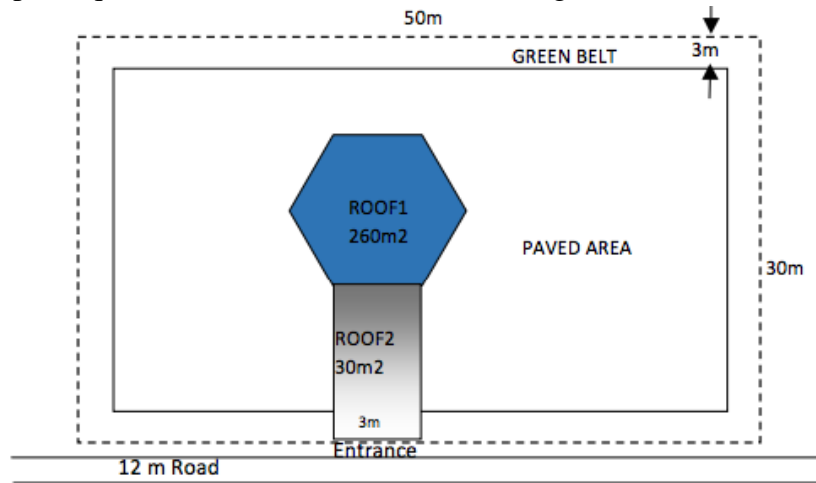
- b) What are the green rating systems in India?
- c) Explain the green building rating system accessed by GRIHA?
- d) Write down the criteria adopted for GRIHA rating?

3) Home Assignment- 2

- 1) What do you understand by the Star Labelling?
- 2) Mention the different rating system followed globally.
- 3) Write a note on:
 - a. Green Globe, b. PEARL Rating system, c. LEED & Green StarA

4) Class Test

- 1. Calculate the Rainwater and design underground system for the following building type: Show the location of Rainwater Harvesting Pit within the Existing Building Campus, Site Boundary as per requirements of Sustainable Site Planing criterion



Parameters	Data
Surface Runoff Coefficient- ROOF 1, ROOF 2	0.95
Surface Runoff Coefficient- GREEN BELT	0.65
Surface Runoff Coefficient- PAVED AREA	0.87
Location	Okhala Industrial Area, New Delhi
Annual Rainfall	110 mm
Site Boundary	-----



5) Studio Work

- ❖ Students in Four Groups required to collect Various Energy and Building Design Data
 - ❖ Walk-through Analysis was conducted to study the Energy Consumption in the LEED certified Existing Building. The data collection helped to understand minimum energy performance as per the Energy & Atmosphere category of the LEED EB O&M rating system
 - ❖ Each group has collected data on Window & Wall Areas, Energy facility including Electrical devices and connected load in the selected floor area of an Existing Building within campus
-
- Due to time management, academic curriculum and availability of lecture hours, LEED LAB activities have been aligned to suit the various requirements of the respective participating Institutes and logistic availability.



GBCI SUSTAINABILITY AWARD

Amity University Haryana and GBCI has also forged together to promote sustainability education on an final year students. The idea is to motivate final year thesis students to do a unique research and develop innovative solutions. In order to promote such research AUH and GBCI will reward the students with GBCI Sustainability Awards. The award consists of price money in three levels and a sustainability award trophy to encourage fellow students.

The three levels of Sustainability Award as Gold, Silver, and Bronze Medal demonstrating leadership in environmental sustainability. The first recipient of the sustainability award Mr. Manyapu Vivek, Batch 2014-2019 has completed his research internship offered in TERI, Nagpur under Dr. APJ Abdul Kalam Summer Internship Programme with support from AUH. The award was received from Ms. Priyanka Kocchar, Regional head, GBCI, India and honorable Chancellor

Dr. Assem Chauhan. Mr. Vivek was encouraged to pursue his research in environmental management and provide better solutions for our community.



‘GBCI Sustainability Award’ at **Amity University Haryana in 2018**, GBCI India has instituted with an objective to mainstream sustainability and arm students with knowledge and skills needed to affect real change. Institutionalization of the GBCI Sustainability Award strengthens our commitment to advancing sustainability education with engaging student community.

Three awards, in **Gold, Silver and Bronze category** correspond to a monetary value of **Rs. 100,000, Rs. 50,000 and Rs. 25,000** cash prize, a certificate and medal respectively, and are awarded to meritorious candidates whose performance is judged as the best in their project work (UG and PG). This is awarded under the category of ‘**Corporate Awards**’ during the annual Convocation of Amity University Haryana (AUH), every year.

GBCI India and Amity University Haryana (AUH) have a strong vertical and horizontal collaboration on mainstreaming sustainability across board. A structured approach is followed to identify sustainability-centric projects of students towards earning Bachelor’s or Master’s degrees. A three- tiered evaluation (Invitation of entries, Jury members and evaluation criteria) is conducted before the shortlisted candidates receive the award at their annual Convocation.



Nomination criterion:

S.No	Criteria
1	Academic Performance (final CGPA) (20 Points)
2	Title & Design of the Project Report (10 Points)
3	Academic Content (Research Originality) (20 Points)
4	Impact on Environment, Health & Society (25 Points)
5	Implications for Industry and Governance (25 Points)

Evaluation criteria for 3rd level of project assessment: Compilation of marks and a final round of screening of students (with reference to any pending exams) is conducted. A list of marks (average of points awarded by each jury member) for each project and candidate is prepared, by the jury members followed by declaration of **Awardees** for the **GBCI Sustainability Award**.

Student Testimonials

“Initiatives like LEED Lab today will create a future generation that will make green the ‘new normal’”.
-Nupur Goyal, B. Arch

“LEED is the definite future of the building of tomorrow”. -Ankit Shama, B. Arch

“LEED has helped to set up a platform which will help all stockholder of built environment to comprehend sustainability, develop, and account for environment to make our built environment sustainable”.
- Mufti Jibrayeel, B. Arch

“LEED Lab is a beginning of evolution of architecture and design”.

-Dinesh Kumar B.E.Civil

Faculty Development and Training



LEED LAB EVENT PROGRAM		
S.NO	DATE	EVENT TITLE
1	5TH JAN 2018	LEED LAB LAUNCH EVENT
2	11TH MAY 2018	LEED LAB VIVA
3	9TH AUG, 2018	FDP CUM IMMERSION OF LEED LAB FACULTY ON LEED LAB
4	30TH AUG 2019	MEDIA VISIT LEED LAB
5	26TH SEP, 2019	LEED LAB QUIZ @ INNOVATION DAY
6	27TH SEP 2019	LEED LAB SESSION
7	8TH NOV 2019	LEED LAB SESSION
8	16TH-21ST DEC 2019	LEED LAB FDP

<p style="text-align: center;">ADVISORY BOARD</p> <p>Chief Patron: Prof. (Dr.) P. B. Sharma Vice-Chancellor Amity University Haryana</p> <p>Patron & Chair 'LEED Lab': Prof. (Dr.) Padmakali Banerjee Pro-Vice-Chancellor Amity University Haryana</p> <p style="text-align: center;">CONVENERS:</p> <p>Prof. (Dr.) Ila Gupta Director, Amity School of Architecture & Planning, Amity University Haryana</p> <p>Dr. Kushagra Rajendra Convener, 'LEED Lab' & HoD Amity School of Earth & Environment Science, Amity University Haryana</p> <p style="text-align: center;">ORGANISING COMMITTEE:</p> <p>Prof. (Dr.) Pallavi Sharma Amity School of Architecture & Planning</p> <p>Ar. Geetika Verma Amity School of Architecture & Planning</p> <p>Ar. Arun Bhandari Amity School of Architecture & Planning</p> <p>Dr. Deepika Pandey Amity School of Earth & Environment Science</p> <p>Gaurav Mukhija Asso. Director, & USGBC Faculty, Green Building Certification Institute (GBCI)</p>	 <p style="text-align: center;">CONTACT PERSON</p> <p>Prof. Pallavi Sharma 9717557041 psharma3@ggn.amity.edu Ar. Geetika Verma 9971635075 gverma@ggn.amity.edu Dr. Deepika Pandey 8826705402 dpandey@ggn.amity.edu</p> <p style="text-align: center;">Address: AMITY UNIVERSITY HARYANA Amity Education Valley Gurugram, Manesar, Pachgaon, Haryana (122413) India Ph.No-0124 233 7015</p>  	<p>FACULTY DEVELOPMENT PROGRAMME</p> <p>ON</p> <p>GREEN RATING REGIME FOR SUSTAINABLE HABITAT</p> <p>16th Dec – 20th Dec 2019</p> <p>Organized by</p> <div style="display: flex; justify-content: space-around;">   </div> <p>U.S. Green Building Council Green Business Certification Inc</p>  <p>Amity School of Architecture & Planning Amity School of Earth & Environment Sciences Amity University Haryana, Gurugram</p>
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AMITY UNIVERSITY HARYANA

Amity University Haryana (AUH) is built on a foundation which embodies qualities that have made Amity institutions world-class over the last two decades. It has instituted global standards in education, training and research with state-of-the-art infrastructure with latest teaching methodologies. Amity University Gurugram has been ranked among top 150 university among India (NIRF, 2019) for its quality and innovation driven education.

Amity University Haryana is the only university in India and Asia's second to be awarded with the coveted "LEED Green Platinum Certification (EB)", highest Green Building Standard for its building design, operation and maintenance by USGBC. This validates the meticulously designed lush green campus of AUH that ensures optimum utilization of resources, extensive use of natural light, energy efficient lighting, solar energy unit, real time monitoring and control of energy utilization.

The impact of pristine nature is also felt in the air quality prevalent within the campus which is at least three to four times better than that of Gurugram & Delhi. The campus is also blessed with rich biodiversity and a natural habitat surrounded by the Aravalli hills, thus making AUG a place for "Living and Learning in harmony with nature."

LEED LAB @ AMITY

LEED Lab is an educational module, AUH has launched in 2017 in collaboration with GBCI to train and educate faculty & students (from streams of Architecture, Planning, Environmental Science, Design and Engineering) to cater the upcoming industry need of qualified human resources in area of green building and sustainable habitat. LEED Lab is a unique academic initiative which integrates sustainable habitat/green building policy framework with classroom activity to provide hands training in arena of sustainable built environment.

Green Business Certification Inc. (GBCI)

Green Business Certification Inc. (GBCI) provides third party credentialing and verification of several rating systems relating to the environment, with the oversight of the United States Green Building Council to ensure the oversight of the Leadership in Energy and Environmental Design (LEED) project certification and professional credentialing processes.

Unites State Green Building Council (USGBC)

The USGBC is a nonprofit organization and it provides robust a platform to leaders working to buildings that are environmentally responsible, profitable and healthy places to live and work. Driving its mission to transform the built environment is USGBC's LEED® (Leadership in Energy and Environmental Design) Green Building Rating System™, which is supported by a robust LEED education workshop program and the LEED Credentialing program, administered through the Green Building Certification Institute.

Faculty Development Programme on Green Rating Regime for Sustainable Habitat

The FDP is organised under the aegis of USGBC, for capacity building among qualified faculty in area of green building and sustainable habitat in line of 'LEED Lab'. It is a week-long module delivered through robust classroom teaching added with field visits and exercises.

- The highlights of 5-days FDP will be:
- Green buildings & rating systems
 - Energy & Atmosphere
 - LEED for Operations & Maintenance
 - Building Design & Construction
 - Government response: Codes and standards (MoEFCC, NBC, ECBC)
 - Water Efficiency
 - Materials and Resources
 - Indoor Environmental Quality
 - Site visit

Registration:

Without accommodation: INR 1500 (Includes working lunch, FDP kit and certificate)
With accommodation: INR 5000 (Includes meals, FDP Kit, certificate and twin sharing accommodation in AUH campus)

Amity School of Architecture and Planning

Amity School of Architecture and Planning, embarked its journey toward the goal of quality education in the year 2011. ASAP is committed towards developing architects and planners who are sensitive towards environment sustainability. The platinum rated green building offers constant motivation to all the university students for being more responsible global citizens.

The faculty at ASAP provide constant encouragement to the students to analyze and experiment with the intention to unveil real time solutions to existing global issues and also tutor them in the elementary and prognosticate techniques of construction. Technologies and philosophies are integrated and instilled in the pupils to create a holistic approach towards the fields of planning and architecture.

Amity School of Earth and Environmental Science

ASEES at AUH is working at the interface of environment and development. The school is focussed on providing leadership in the areas of environmental management, sustainable habitat, biodiversity conservation, natural resource management, pollution control and remediation. The collaborative interdisciplinary nature of the department is a blend of scientific experts working towards creating a better future and developing sustainable habitat on earth. The research and learning provided by the department are essential tools for undertaking the environmental challenges of local, regional and international communities.



AMITY UNIVERSITY HARYANA
 Established vide Government of Haryana Act No. 10 of 2010

Directorate of Outcome
Outcome Report(Event/Activity Organized @ AUH)

1. General Information

Date: 16/12/2019 – 20/12/2019
Event Type: Faculty Development Program
Event Title: Green Rating Regime for Sustainable Habitat
Venue: Amity University Haryana
Organized by(School): GBCI, ASAP, ASEES, LEED Lab AUH
Student Participation*: No. of Students from AUH (Course wise): NA
Faculty Participation*: No. of Faculty Members from AUH (Deptt. wise):- 20
Participation from outside AUH*: No. of Students & Faculty Members- 3

(Enclose attendance sheets in given format)

Event Coordinator(s) with designation: Dr. Ila Gupta, Dr Kushagra, Ar. Geetika Verma, Dr. Pallavi Sharma, Dr. Deepika, Arun Bhandari, & Gaurav Mukhija

Details of Expert/Speaker/Resource Person/Judge:

SN	Country Name	Expert Name	Organization Name	Designation	Specialization	Contact No.	E-mail Id	Address	Major Areas where Amity can Collaborate with expert	CV of Expert (Yes/No)



1	India	GauravShorey	PSI	Director PSI Energy Pvt. Ltd.	B.Arcit DACI				Sustainable Design	Yes
2	India	Ashish Jain	AEON						Sustainable Design	Yes
3	India	GauravMukhija	GBCI						Green building, LEED rating System	No
4	India	SupritaBiswas	GBCI						LEED rating System	No
5	India	NehaKaul	GBCI						LEED rating System	No
6	India	ApoorvVij	GBCI						LEED rating System	No
7	India	SuhaasMathur	GBCI						LEED rating System	No

2. Outcome of the Event with Time Lines (Proposed/Achieved)

Envisaged Outcome	Tangible/ Intangible	Achieved/ Proposed	Target date & responsibilities (if proposed)	Details of outcome
1. Outcome related to Academia Connect				
a) Collaborations for Research Papers/Conference Papers/ Book Chapter etc.				NA
b) Collaborations & MOU for Research Guidance [PhD, PG & UG (summer training, Dissertation)] & Projects/Use of Instruments etc.				NA
c) Collaboration for Funded Projects				NA
2. Outcome related to Industry Connect				
a) Placement				NA
b) Collaborations for Research Papers				NA
c) Collaborations & MOU for Research Guidance [PhD, PG & UG (summer training, Dissertation)] & Projects/Use of Instruments				NA
d) Collaboration for Funded Projects				NA
3. Outcome related to Society Outreach				
a) Benefit to society in terms of Health & Hygiene				NA
b) Benefit to society in terms of Education				
4. Outcome related to Students Learning & Grooming				



<u>Any other</u>			

3. Event Report along with glimpses of the event(Photographs)

3.1 General Introduction of the Event

The FDP is organised under the aegis of USGBC, for capacity building among qualified faculty in the area of green building and sustainable habitat in line of 'LEED Lab' programme.

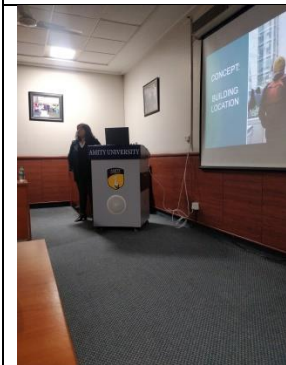
3.2 Objectives of the Event

To collaborate with GBCI, to train and educate faculty (from streams of Architecture, Planning, Environmental Science, Design and Engineering) to cater the upcoming industry need of qualified human resources in area of green building and sustainable habitat.

3.3 Brief about the visit

The FDP is organised under the aegis of USGBC, for capacity building among qualified faculty in the area of green building and sustainable habitat in line of 'LEED Lab' programme. It is a week-long module delivered through robust classroom teaching added with field visits and exercises. LEED Lab is an educational module that AUH has launched in 2017 in collaboration with the GBCI. The themes of 5-days FDP were:

- Green buildings & rating systems
- Energy & Atmosphere
- LEED for Operations & Maintenance
- Building Design & Construction
- Government response: Codes and standards (MoEFCC, NBC, ECBC)
- Water Efficiency
- Materials and Resources
- Indoor Environmental Quality





3.4 Scanned copy of attendance sheets

Amity University Haryana FDP: Green Rating Regime for Sustainable Habitat Attendance Sheet (Site Visit) Date: 19/12/19					
S.No	Name of the Faculty	Institute/University	Designation	Signature (Morning Session)	Signature (Afternoon Session)
1	Dr. Ba Gupta	Amity University Haryana	Professor		
2	Dr. Archana Chaudhary	SGT University	Associate Professor		
3	Ms. Nisha Sharma	K.R. Mangalam University	Assistant Professor		Outside
4	Ms. Shashi Mehta	Amity University Haryana	Assistant Professor I		Outside
5	Mr. Rahul Mehta	Amity University Haryana	Assistant Professor	Rahul	outside
6	Ms. Kumud Dhanwantri	Amity University Haryana	Assistant Professor II		
7	Ms. Suniti Sood	Amity University Haryana	Assistant Professor III	Sunithi	outside
8	Ms. Geetika Verma	Amity University Haryana	Assistant Professor II	Geetika	outside
9	Mr. Anjith Chaudhan	Amity University Haryana	Ph.D Scholar (Masters)	Anjith	CAMPUS
10	Dr. Pooja Singh	Amity University Haryana	Assistant Professor III	Pooja	Outside
11	Mr. Nitish Kumar	Amity University Haryana	Assistant Professor	Nitish	CAMPUS
12	Mr. Agrewal Raghav	Amity University Haryana	Assistant Professor	Raghav	Campus
13	Mr. Dilip Singh Kishwaha	Amity University Haryana	Assistant Professor	Dilip	CAMPUS
14	Dr. Deepika Pandey	Amity University Haryana	Assistant Professor III	Deepika	CAMPUS
15	Ms. Prajakta Dilip Rahate	Amity University Haryana	Assistant Professor	Prajakta	CAMPUS
16	Mr. Radha Krishan	Amity University Haryana	Assistant Professor	Radha	CAMPUS
17	Dr. Doreshor Khwairakpam	Amity University Haryana	Associate Professor	Doreshor	CAMPUS
18	Prof.(Dr.) Pallavi Sharma	Amity University Haryana	Professor	Pallavi	
19	Mr. Arun Bhandari	Amity University Haryana	Assistant Professor	Arun	outside
20	Ms. Aditi Sharma	Amity University Haryana	T.A.	Aditi	Campus
21	Dr. Shikha Bhardwaj	Amity University Haryana	Assistant Professor II	Shikha	outside
22	Ms. Kavita	Amity University Haryana	Assistant Professor	Kavita	outside
23	Dr. Shaili Srivastava	Amity University Haryana	Associate Professor	Shaili	Outside



Faculty Development Programme
cum
Immersion of LEED Lab faculty 2018
on
LEED Lab
 Location: C-214

Thursday, August 09 | 10:00 am – 5:00 pm |
 Resource persons: **Mr. Apoorv Vij** and **Ms. Ruchi Sneha**, GBCI, India

Morning Session 10:00 am to 1:15 am	<input type="checkbox"/> Welcome and Introductions <input type="checkbox"/> Introduction to Green Buildings <input type="checkbox"/> LEED Green Associate Credential <input type="checkbox"/> Sustainable Thinking <input type="checkbox"/> Sustainable thinking at work: new processes for building green <input type="checkbox"/> U.S. Green Building Council
01:15 pm to 02:00 pm	<input type="checkbox"/> Lunch
Afternoon Session 02:00 pm to 05:00 pm	<input type="checkbox"/> Leadership in Energy and Environment Design (LEED) <input type="checkbox"/> Location and Transport <input type="checkbox"/> Sustainable Sites <input type="checkbox"/> Water Efficiency

Friday, August 10 | 10:00 am – 5:00 pm |
 Resource persons: **Mr. Suhaas Mathur** and **Ms. Priyanka Kochhar**, GBCI, India

Morning Session 9:30 am to 1:15 pm	<input type="checkbox"/> Energy and Atmosphere <input type="checkbox"/> Materials and Resources <input type="checkbox"/> Indoor Environmental Quality <input type="checkbox"/> Innovation in Design and Operations
1:15 pm to 2:00 pm	<input type="checkbox"/> Lunch Group Photograph with Pro-VC
Afternoon Session 02:00 pm to 05:00 pm	<input type="checkbox"/> Synergies + LEED <input type="checkbox"/> Additional LEED resources <input type="checkbox"/> Preparing for LEED GA exam



**Report on
Faculty Development Programme**

**Immersion of faculty on LEED Lab
Submitted by- Geetika Verma (ASAP)**

Day1-Thursday, August 09,2018

FDP Pre-lunch session starts with the greetings and warm welcome of the resource persons Mr. Apoorv Vij and Ms. Ruchi Sneha, GBCI, India by Dr. Kushagra, followed by a short introduction of all the participants in the conference room, A-Block.



Topic covered

Morning Session- 10:00 am to 1:15 am

- Welcome and Introductions
- Introduction to Green Buildings
- LEED Green Associate Credential
- Sustainable Thinking
- Sustainable thinking at work: new processes for building green
- U.S. Green Building Council

Afternoon Session- 02:00 pm to 05:00 pm

- Leadership in Energy and Environment Design (LEED)
- Location and Transport
- Sustainable Sites
- Water Efficiency



These were very informative and interactive sessions. All the relevant Topics were covered in detail. Lecture comprises of group discussion, quiz, group task, etc. Lunch for the guest was organized by AUH.



Group photo of the faculties participated on first day.



Day2-Friday, August 10, 2018

Second day session starts with the Welcome of Mr. Suhaas Mathur GBCI, India by presenting him Amity Memento by the faculty of AUH.

Topic covered

Morning Session- 9:30 am to 1:15 pm

- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation in Design and Operations

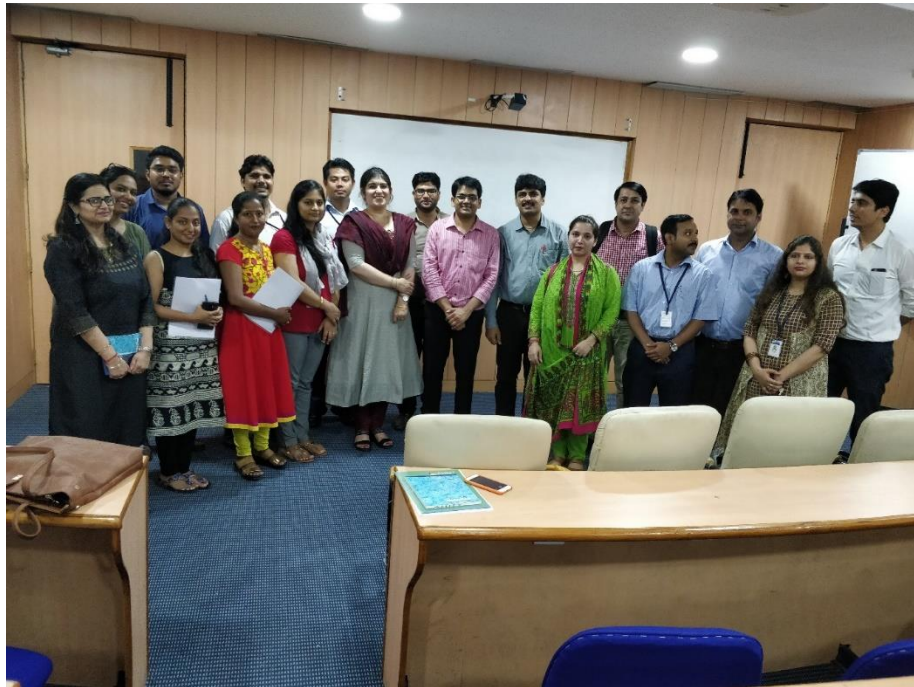
Afternoon Session- 02:00 pm to 05:00 pm



- Synergies + LEED
- □ Additional LEED resources
- Preparing for LEED GA exam

This session start with Energy Demand Concept, like- establish energy goals, size building appropriately, monitor consumption, etc followed by Energy efficiency Concepts like- address the envelope, install high performance system and appliances, high efficiency infrastructure, use energy simulation, monitor and varying performance etc.

Group photo of the faculties participated on second day.



Amity University Haryana: A living laboratory for Sustainability.

To address challenges of environment and development, UN adopted ‘Agenda 2030’ to ensure SDGs in line of “**quadruple helix model**”. It entails linkages between government, academia, society and business. An approach has been devised to develop **academic institutions and new**



universities as living laboratories for sustainability Amity University Haryana is finest example of such new university which is developing as living laboratory of sustainability by adopting multipronged approach including *Nature Development, Green Building, Renewable Energy consumption, sustainability education, 5Rs approach of consumption* and many more.

Amity University Haryana is located in lap of Aravalli range; adopted nature just development approach without converting its **natural terrain, native vegetation, natural drainage that ensure maximum ground water recharge**. Within a decade of its formation AUH campus is converted into **green hub in this semi-arid region**. University buildings are **LEED Platinum certified; highest global rating for green building by GBCI and US Green Building Council (first university building in India and 2nd only in Asia)** with many *passive features that minimize heat regime and reduce energy consumption*. Extensive *plantation of notable native vegetation* (Sahtut, Kikad, Lasoda, Neem, Ficus, Amaltash, Chakresia, Tikoma, Pipal along with fruit and nut bearing trees) ensure biodiversity intact and **ensure critical ecosystem services** including groundwater recharge which is reflected in **birds (more than 120 avifauna of native and migratory) and butterfly diversity in campus**.

University also ensures well defined SOP for waste management including segregation, collection and disposal. A small unit of biogas plant and composting plant is operational to manage dairy and other organic waste and provide bio-manure. Similarly, **to manage waste water 160 KLD STP and ETP** are operational that make **AUH a zero discharge campus** as treated water is further utilized as gardening, irrigation and grey water flushing.

University supplements its energy with solar energy substantially through rooftop **solar PVC, along with LED lighting and efficient wiring** which further reduce green house footprint and air pollution load in campus. AUH has developed with Indian Institute of Tropical Meteorology (IITM) a well equipped **air quality monitoring station on 24*7 basis** that monitor **22 different parameters** including **8 pollutants of Air Quality**, several organic species, trace gases and weather parameters. **Atmospheric turbidity is monitored by Nephelometer**. AUH is also a field **monitoring station of NASA for monitoring of optical, radioactive and physico-chemical states of the atmosphere** with help of muti-spectral Sun-Sky Radiometer. Amity University Haryana with well equipped monitoring facility gives control/background data for comparing air quality status of urban areas including Delhi and Gurgaon. Air quality status of campus is critically better throughout year as compared to Delhi and Gurgaon. Although campus is very near to NH8 and in the way of wind that brought desert sand to NCR periodically but natural green cover provide blanket for particulate matter that reflects in better air quality status of campus.

Air Research facility at University is mainstreaming Air pollution and Atmospheric turbidity study. Both are linked with climatic condition, land use and its vicinity with Thar Desert and populous Delhi-Gurgaon zone. Monitoring of 22 significant chemical species of Air pollutant including eight necessary parameters of AQI (Air Quality Index) shows a significant low AQI usually fall between 0-50 and 50-100 grade, while Delhi and adjoining areas hardly observe Good



status for AQI. PM_{2.5} is dominating parameters in Delhi AQI while PM₁₀ dominates in AUH campus; which is a clear indication of pollution sources. In Delhi and adjoining urban areas, has been showing continuous rise in PM_{2.5} concentration, which is directly associated with CNG based transportation, while significance of PM₁₀ in AUH campus is linked to surface dust and desert wind that too get regulated by creation of bio-shield of native vegetation in AUH campus.

Atmospheric turbidity study is also very critical for understanding of elevated air pollution in Delhi NCR. NASA based facility provide Aerosol optical depth; vertical concentration of total aerosol and ozone concentration. This monitoring gives idea about dust strome across the region. Since area between NCR and Thar desert are facing rapid loss of natural vegetation cover due to rampart mining and land use change; leading to increase in frequency and intensity of dust strome sources from Thar Desert. Dust stromes significantly elevate the AQI of Delhi-NCR and posing a threat of desertification to these areas. So study of atmospheric turbidity at AUH campus is very significant for Air pollution and desertification study

Amity University Haryana has created an *exclusive niche for Environment Education and research* by developing world class infrastructure for Air pollution study in particular along with **integrating it into teaching pedagogy**, so that students not only **become sensitive to environment** but ready to take challenge for providing solution for contemporary challenges. **Environmental study** (Core course for all UG programmes) and **Environmental Management and Climate Science** (Minor degree) are offered along with B.Sc in Earth Science/Geology (*First among private university to offer*), and M.Sc in Environmental Science & Management and M.Tech Solar energy. Extensive field-based study is inherent part of these programmes; a approach of 'see-learn-apply', which brings students more closure to nature. Students are engaged with campus-based assignments and research projects in area of environment, pollution, biodiversity and waste management in UG and PG level in line of **experiential learning** for better output and to provide solution for contemporary environmental challenges including Air Pollution.

Amity University Haryana meet the challenges of sustainability by adopting best practices with help of maintaining campus as natural landscape with optimal disturbance that is basic for maximum productivity by blending traditional wisdom, technology, and its stockholders prospective. On the occasion of world environment day, **AUH present itself as living laboratory of sustainability.**



Introduction

Choice of a language lab or classroom training networks is an important decision made by **educational institutions** to offer their students the ability to **learn French, German, Spanish, Russian, Chinese, Japanese, or Korean**, or even several languages at once. The language lab is a very useful tool that **facilitates** classroom **engagement** and **interaction** via computer-based exercises and activities to maximize **language immersion**. These labs provide a very different experience from the traditional system of teaching and learning languages, offering more **advanced features** and **functionalities**.

Learning a new **language** just by studying the theory is not enough to guarantee a successful **language learning experience**. Language labs provide practice in an entertaining and interactive way to acquire the 4 main language skills: **listening, speaking, reading, and writing**. All users would be able to learn foreign languages at a fast pace in this environment. They would learn more comprehensively through a language lab, using more class time instead to achieve these three main objectives:

- **Self-learning:** The student progresses in a self-guided but structured and progressive training to achieve the goals and objective set by the school or educational body.
- **Complimentary:** Language labs allow students to reinforce material learned in class by putting them into practice through interactive activities.
- **Monitoring and Evaluation:** Teachers know the progress of each student and receive reports of strengths and weaknesses to better adapt the classroom activities.

Oréll is a next generation information technology enabled provider of solutions. It is perhaps the only one of its kind, exclusively serving the education institutions. Boasting a comprehensive portfolio of products and services that seamlessly merge with the educational value chain, it has 3500+ installations and a presence across 40 countries benefitting over 1 million learners and instructors, worldwide.

Oréll Digital Language Lab

The young learners have to impart skills to merge into a dynamic society where knowledge, culture, technology and attitude are changing at an alarming speed. Oréll Digital Language Lab with all its features **helps the student to update their knowledge, skills and attitudes in communication**. The Teacher/Linguist can design and create new and interesting materials for a computer added classroom with a communicative approach.



ORELL Digital Language Lab offers **complementary materials for students** at all stages of language proficiency; Lower Kindergarten to Post Graduate and Professional Courses. All students cannot but improve their knowledge of a language/communicative skill from the positions that they were in at the start of the course. Language Lab opens for them a new window of opportunities in the global job scenario. The opportunities at Call Centres, Nursing jobs, Medical transcription, personal or telephonic interviews from potential employers from the East, West, North or South, can be enhanced through efficient communication.

INSTRUCTOR'S CONSOLE

This linguist software is provided with control function to monitor all student positions. With this, various batches, their session timings and their respective lessons can be organised. The unique feature of options for listening to the native speakers and the student's voice separately and stopping the action at selected student position for giving instructions. It thus enables a personalised attention to each user. Linguist can view the video and text and also hear the sound of the assigned material. Broadcasting facility is available. Linguist coordinates the group discussion.

STUDENT'S CONSOLE

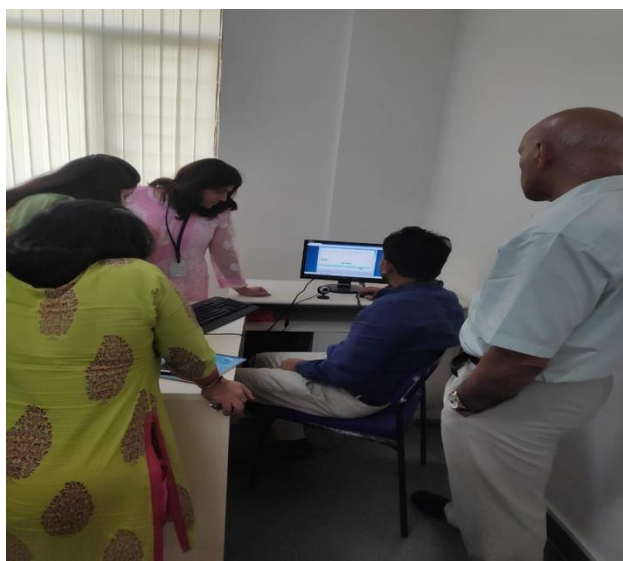
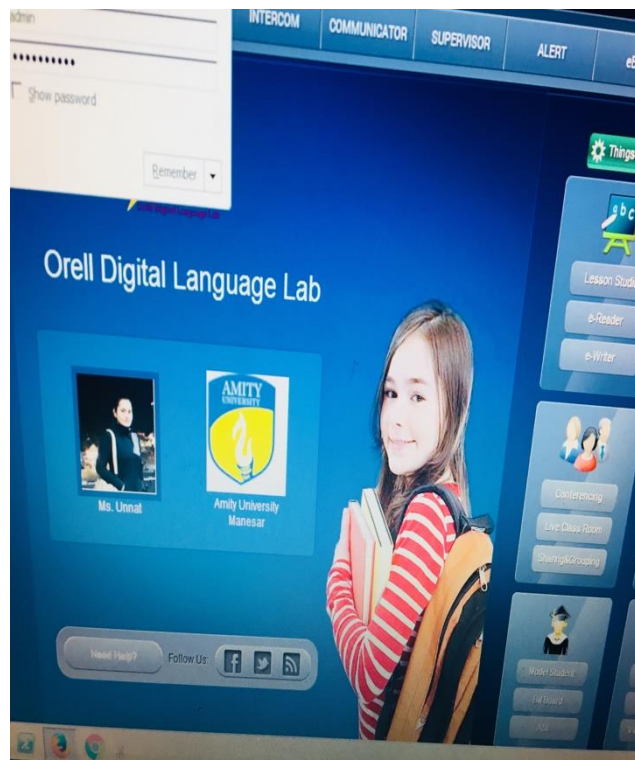
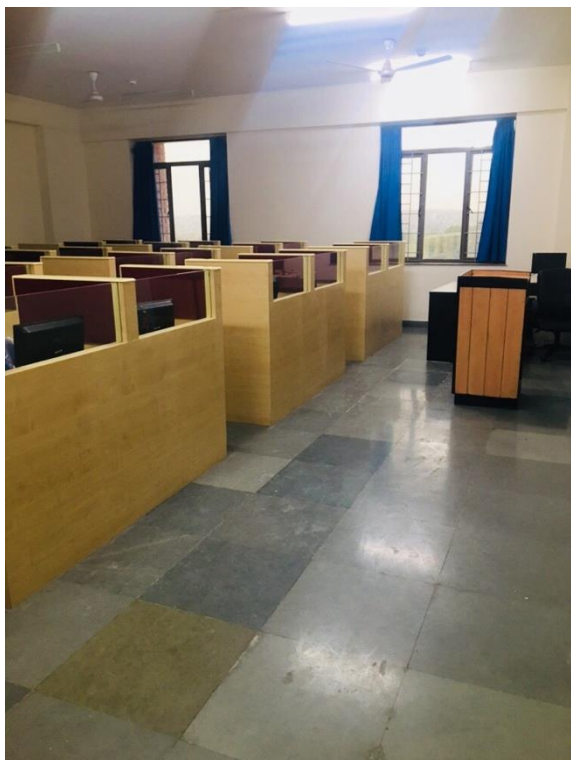
This feature enables downloading of the recorded lesson from the teacher's console. The student can listen to the native speaker's lessons and pronunciations see video clippings and read the text. The student has provision to type the text material on the screen.

The student can repeat the lesson assigned by the linguist, record, and replay. Continuous repetition of the correct pronunciation gives fluency. This paves way to excellent communication. The student can be part of a group discussion. Correction in case of any erratic pronunciation is possible by the linguist.

RECORDER



This feature enables the instructor to record lessons with audio in their own sound, text can be typed and saved. Lessons recorded and saved can be transmitted to the students. Whole year lesson can be recorded and saved.





**IIRS-ISRO NETWORK CENTER
REMOTE SENSING AND GIS**



AMITY UNIVERSITY HARYANA



Amity University Haryana
Network Institution ISRO/IIRS Outreach Programme
2018-19



Amity University Haryana is a network institute of Indian Institute of Remote sensing (IIRS); a nodal agency for education and research of Remote sensing and GIS under umbrella organization of Indian Space Research Organization (ISRO). With objective to conduct courses on different aspects of Remote sensing, Geographical Information System (GIS) and Global Navigation Satellite System (GNSS) jointly with IIRS, AUH become part of IIRS outreach programme to educate and train diverse faculty and students. These technologies are robust methodologies to transform productivity of any academic and research project; if applied suitably. Amity School of Earth and Environmental Sciences runs few courses restricted to their UG and PG programme, this academic association with IIRS provides opportunities for faculty and students across the academic disciplines.

Team:

Dr. Kushagra Rajendra (Coordinator)

Dr. Shruti Dutta

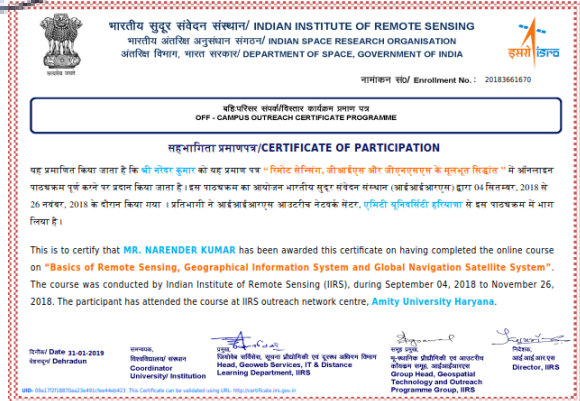
Programme conducted:

A three and half month-long programme on Remote sensing, GIS and GNSS has been conducted during months of September to November only for faculty members with idea to disseminate opportunities and applications of these technologies among faculty and students. A total twelve faculty had participated across several branch of engineering and science and all of them successfully completed certification criterion. There is issue of broadcast timing of lectures and discussion sessions which many times did not match with our schedule, but it had managed and all lectures had been conducted successfully. Now we are focussing to engage students for basic programmes with more practical oriented content.

IIRS academia meet:

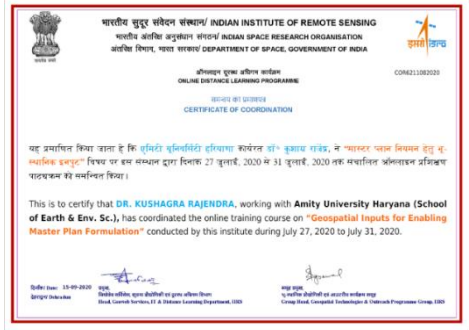
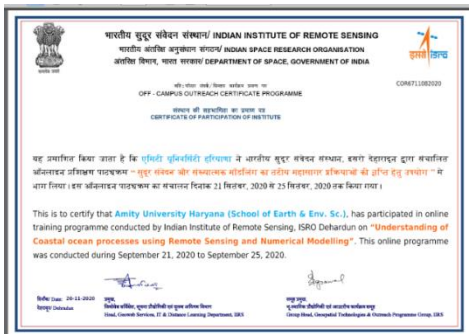
Selected Network Institutes had been invited for IIRS Academia Meet (IAM) on regular basis to share experiences, discuss updates in training and learning of Remote Sensing and GIS and chalk-out the future planning for better reach and delivery of content to large section of students and faculty members through several IIRS Network Institutes. AUH also got opportunity to be part of two day in 2019 (March 13-14) and 2020 (March 3-4) seminar on Remote sensing, GIS and GNSS to strengthen academic delivery on outreach programmes at IIRS campus, Dehradun. Many valuable suggestions has been made including developing teaching pedagogy jointly with network institutions and enhancing quality teaching delivery to make certification more interactive and at per international standard.

Snapshots



Successful participants with their certificate

Certificate of completion



IIRS Network Certificate



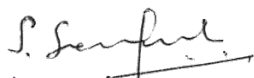
IAM 2020

IAM 2019



Courses Conducted

1. 36 IIRS Outreach Programme on Basics of Remote Sensing, Geographical Information System and GNSS
2. 47 IIRS Outreach Programme on Satellite Remote Sensing for Air Pollution Studies
3. 50 IIRS Outreach programme on Basic of Remote Sensing, GIS and GNSS
4. 51 IIRS Outreach Programme on Remote Sensing and Digital Image Analysis
5. 52 IIRS Outreach Programme on Global Navigation Satellite System
6. 53 IIRS Outreach Programme on Geographical Information System
7. 59 IIRS Outreach Programme on Overview of Planetary Geosciences with special emphasis to the Moon and Mars
8. 60 IIRS Outreach Programme on Application of Geoinformatics in Ecological Studies
9. 61 IIRS Outreach Programme on Satellite Photogrammetry and its Application
10. 62 IIRS Outreach Programme on Geospatial Inputs for Enabling Master Plan Formulation
11. 63 Outreach Programme on Remote Sensing Applications in Agricultural Water Management
12. 64 Outreach Programme- Basics of Remote Sensing Geographical Information System and Global Navigation Satellite System
13. 65 IIRS Outreach programme on Remote Sensing and Digital Image Analysis
14. 67 IIRS Outreach programme on Understanding of Coastal Ocean Processes using Remote Sensing and Numerical Modelling
15. 69-IIRS Outreach programme on RS & GIS Applications
16. 71-IIRS Outreach programme on Advances in SAR-Polarimetry & Interferometry
17. 72-IIRS Outreach programme on Basic of Geocomputation and Geoweb Services


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