











THE 50 PATHFINDING ACADEMIC INNOVATIONS BY IDP-NAHEP, PANTNAGAR



G. B. Pant University of Agriculture & Technology Pantnagar 263145, Uttarakhand

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THE 60[™] YEAR OF PANTNAGAR STORY (1960-2020)



Institutional Development Plan
National Agricultural Higher Education Project
G. B. Pant University of Agriculture and Technology
Pantnagar 263145, Uttarakhand, India

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Earnest gratitude to Dr. R.C. Agrawal, National Director NAHEP and DDG Agricultural Education for his vision and patronage for all efforts of IDP-NAHEP, Pantnagar

Foreword



Vice-Chancellor
G.B. Pant University of
Agriculture and Technology
Pantnagar, Uttarakhand

// e made a commitment to create the ripples of educational transformation under the IDP-NAHEP project. Now, at the completion of one year, we have a list of exemplary steps taken under the project which supported the educational transformation process within Pantnagar periphery. The University has a robust structure and system but academic innovations need an ecosystem which was well generated through IDP-NAHEP and it is significant that the change is visible all across the University benefitting the stakeholders of the academic system. In this first agricultural university of the nation, I feel pleasure and privileged in presenting 50 of those exemplary steps taken by the IDP-NAHEP which will invariably translate into brilliant outputs and outcomes and will be cherished by the generations for long. I congratulate the IDP-NAHEP team and the University fraternity for these evolutionary breakthroughs which will set a precedence for the entire country.

—y/w/y/_-.

(Tej Partap)



Sincere gratefulness to Dr. P. Ramasundaram, National Coordinator IDP for his relentless efforts and guidance in ensuring excellence into all IDP initiatives of Pantnagar

Preface



Dean
College of Agriculture
PI, IDP-NAHEP
G.B. Pant University of
Agriculture and Technology

Pantnagar, Uttarakhand

The IDP-NAHEP project came to Pantnagar as an opportunity for reforms and innovations in educational structures of the University. Taken into true spirit, the project provided unlimited avenues of experimentation, evolution and transformation in all the academic segments of University life. Due to its indepthness and insight, the project provided omnipresent avenues for students and faculty members. This publication is an effort to capture 50 such interventions which have been critically realized to be of utmost significance to the beneficiaries and the system. The activities and efforts taken under the project were always driven by a futuristic and pragmatic outlook to lead the University towards next gen quest of excellence. The impact and the outcomes have generated this confidence that the University may emerge as one of the leading global destinations of higher education through such systemic reforms and interventions.

5. cc. cookzeli.

(S.K. Kashyap)



It is with the blessings of the great souls, that great works are accomplished

About IDP-NAHEP

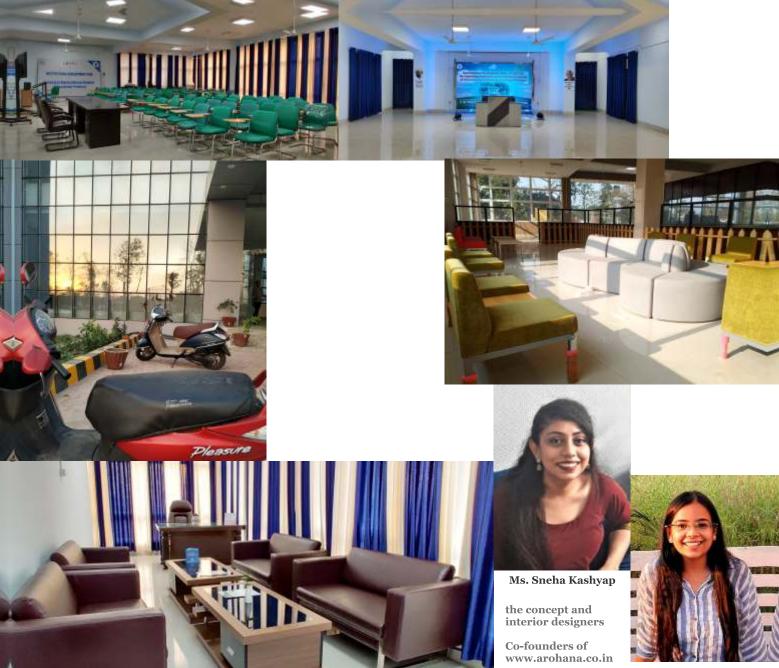
The Institutional Development Plan of National Agricultural Higher Education Project popularly known as IDP-NALIED: popularly known as IDP-NAHEP is an ambitious plan of reforms in teaching and learning ecology of G.B. Pant University of Agriculture and Technology, Pantnagar through constructive disruptions. The IDP-NAHEP is a World Bank funded project and it aims towards development of higher order cognitive skills of undergraduate students and research and administrative excellence for faculty members through varied interventions. The IDP-NAHEP, Pantnagar provides opportunities to undergraduate students for national and international exposure, soft skills training and technical training in critical areas of choice, language skills in multiple foreign languages, virtual lab for 3D and virtual reality based learning, interaction with renowned experts across the world, entrepreneurship development through incubation centre, experiential learning through industry mentorship, practical exposure in advanced laboratories in the field of artificial intelligence, big data analytics and robotics in agriculture, short term paid internships, exclusive subject based remedial classes. Besides students, the faculty members will also be provided with an opportunity to update and enhance their proficiency and skills through exposure visits, international faculty exchange programmes and other workshops. The University Centre or NAHEP building is the focal point of the project with all required facilities for execution and monitoring of the project activities.



Developed a buzzing hub of academic innovations in the campus

The University Centre or the NAHEP building to reenergize the spirits

The infrastructure and the ecosystem plays a pivotal role in making a long-lasting impact on the students. The IDP-NAHEP, with an aim to reinvigorate the teaching-learning ecosystem of the University, established a pivotal point of innovations at the campus called the University Centre or the NAHEP building. The three-floored mammoth building houses the Virtual Lab, the Innovation and Incubation Centre, the Faculty Development Centre, the Industry Collaboration Centre, the Intellectual Property Management Centre, the Certificate and Diploma Course Centre, the Centre for Skill and Vocational Courses, the Centre for Language Improvement, the e-Content Development Studio, the Committee Rooms, the open-air Amphitheatre, along with a 50,000 sq. mt. lush lawn. This building serves as the nodal point for all the IDP-NAHEP activities and has gradually emerged as a centre of student and faculty capacity building events, trainings, seminars, etc. with more than 18 functional hours in a day.



Ms. Shweta Gupta

A unique and state-of-art concept of NAHEP building interiors generated by Pantnagar compatriots

Giving back to the roots

The concept of NAHEP building (University Centre) was tough to execute as the building was created with a different outlook, and a total transformation for the project purpose looking into the long term goals of the University was indeed a challenge. The plan was to design the interiors to depict the theme of the unit, as, Virtual Lab, Innovation and Incubation Centre, Training Halls, Facilitation Centres. A company of young professionals named Arohana, was put to this ambitious task who agreed to support it without any consultancy fee. The young architect—Ms. Sneha Kashyap with the ideologue Ms. Shweta Gupta, provided the plan of each unit with the details of materials, colours, structures and forms. It appeared as a brilliant plan which was appreciated by every visitor. The initial innovative intervention led to an aligning ecosystem and ambience of the whole structure. Both the young professionals, with Pantnagar roots, did a tremendous task at the onset which set a legend of excellence from very beginning.



Building first fully equipped virtual classroom of the University

Experiencing reality first hand

The virtual reality (VR) and augmented reality (AR) technologies have taken a front seat in the present day teaching-learning, research and futuristic thinking propositions across the world. The IDP-NAHEP established the first Virtual Lab of the University with a seating capacity of 120 students with advanced facility of 3-D projection, AR-VR material projection, headsets to visualize the VR content, flipped and blended learning.



Building first Innovation and Incubation Centre of the University

Making innovation a part of life

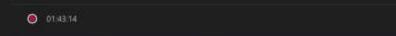
Innovation based ecosystem is the crux of institutional development. Looking into this utmost importance, IDP-NAHEP at Pantnagar launched the Innovation and Incubation Centre in the University with a unique model of promoting students' innovation, mentored by faculty experts, with hand-holding of industry partners. An artistically designed structure has been put to place in the NAHEP building to instigate innovative thoughts in a cohesive ambience. The model has started working and is getting ahead with teams of multiple stakeholders.



Building fully equipped first e-Content Development Lab of the University

Giving new dimensions to learning approaches

The IDP-NAHEP project conceptualized the e-content in an absolutely innovative format with course-wise text modules designed as a workbook, supported with integrated hyperlinked photos, videos, animations, 3-D and augmented reality support. The production of video, animations, 3-D and AR materials to support the 500 modules from across the colleges needed a sophisticated and advanced lab which was generated through IDP-NAHEP in the NAHEP building. The structure, equipment and the ambience of the lab are nextgen and futuristic to serve the University for decades besides meeting out the project targets in a perfect manner.



Adarsha Sakhinetipalli 🦼

Preeti Pandey



4

Dr Pramod Mall, Professor.

Dr Bairaj Singh (Guest)

Leave

Established Faculty Development Centre (FDC) with support of NAARM, Hyderabad under NAHEP Component 2

The country's first in an SAU

It is a matter of pride that GBPUAT, Pantnagar has been bestowed with the Faculty Development Centre (FDC) by National Academy of Agricultural Research Management (ICAR-NAARM) Hyderabad, validating its excellent performance and potential. The IDP-NAHEP, Pantnagar under PI, Dean Dr. S.K. Kashyap, has undertaken the responsibility of establishing the FDC in NAHEP building and instilling a need-based robust programme series to support all the Agricultural Universities across the country. Vice-Chancellor Dr. Tej Partap is leading the FDC as its Chairman.



First robotics lab for University students

An effort to make agricultural outcomes efficient

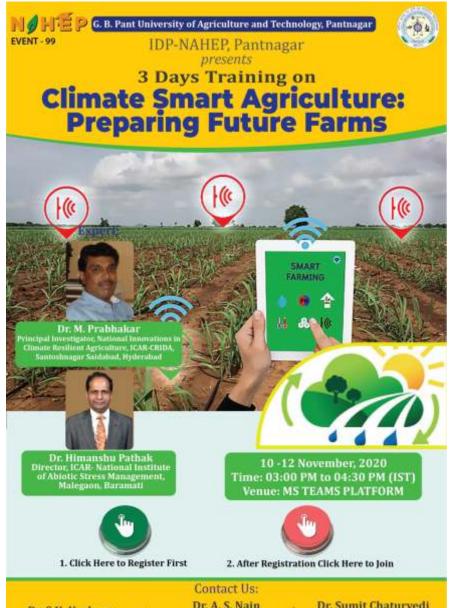
In today's digital era, we ought to move hand-in-hand with the latest technologies. The IDP-NAHEP made it possible to launch the first ever Robotics Lab in the University. The lab is generated with the core idea of robotics, information technology, autonomous mapping, 3-D modelling, programming softwares and precision farming. Making use of such advanced technologies and intelligent machines developed out of it like agrobots, agridrones (sprayer drones), demeter systems (harvester), manipulator (robotics arm) etc. would certainly spike up the educational efficacies.



First artificial intelligence and big data analytics lab developed

Ready to take the intelligence to the next level

The Artificial Intelligence and Big Data Analytics Lab is successfully generated under Agri Informatics component of IDP-NAHEP. The lab will make it possible to automate the tedious farming activities using tools of AI and machine learning by developing algorithms. Besides the lab, field experimentations have started at the C6 plot of Crop Research Centre (CRC) by the experts for developing data sets, pictorial analysis and their future applications.



Dr. S.K. Kashyap Principal Investigator IDP-NAHEP, Pantnagar Dr. A. S. Nain Co-Pl, Coordinator Agri Informatics Group IDP-NAHEP, Pantnagar Dr. Sumit Chaturvedi Training Coordinator Agri-Informatics Group IDP-NAHEP, Pantnagar

First climate smart agriculture lab in place

Let's collaborate with the climate

With the fundamental objective of helping farmers for adapting to and mitigating climate changes, The IDP-NAHEP introduced the Climate Smart Agriculture Laboratory at Crop Research Centre. The lab will be equipped with free air carbon dioxide enrichment (FACE) technology. Exposure to such advanced labs will undoubtedly complement the cognitive and technical competence of both the faculty members and students of the University.



First open-air amphitheatre

Embracing the music of the soul

One of the architectural delights by the IDP-NAHEP to the University is its open air amphitheatre. Known as the IDP Amphitheatre, it is a dedicated place for practising and organizing different kinds of interactive programmes or events like literary activities, cultural activities, talent showcasing, music concerts, open stage plays etc. Recent events include a concert by The Mukt Band and a college-level debate competition organized under the collaboration of YUVA and the IDP-NAHEP.



UG classroom renovation across the University

Infusing an aura of inspiration and enthusiasm

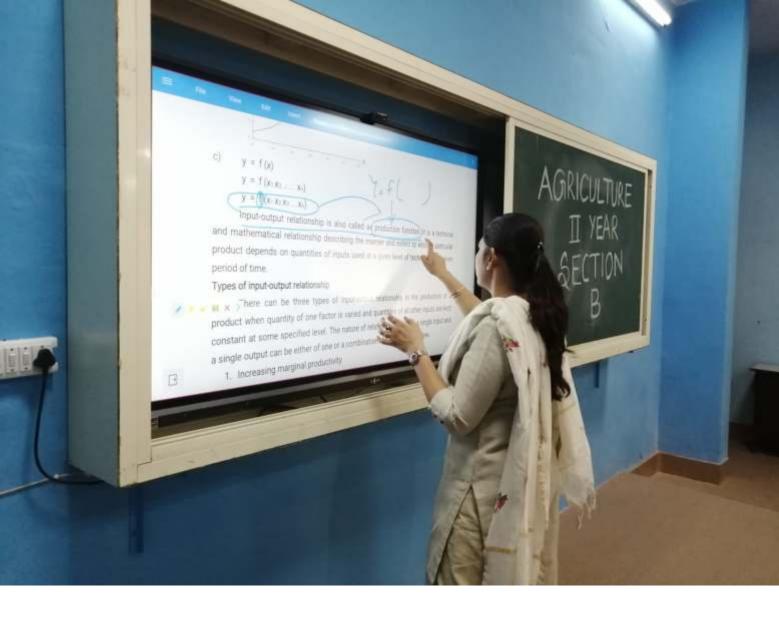
The classrooms are the place where students stay long throughout the University life. The IDP-NAHEP took the lead to renovate 30 undergraduate (UG) classrooms with aesthetic interventions like inspiring quotations, pin boards, aligning wall colours, curtains, proper lighting, floor sheets, dustbins, doormats etc. to provide a congenial and welcoming feeling to the students. Indeed, the ambience adds a value to the teaching-learning situation in the classrooms.



Equipped 30 classrooms as digital classrooms with interactive digital flat panel facility

When technological gadgets make learning fun

It has been since 1960 that teaching started at Pantnagar. The IDP-NAHEP introduced Interactive Digital Flat Panels in 30 classrooms of the University in 2020 to empower teaching process. With this modern gadget online synchronous teaching, screen sharing, using shared white boards while teaching online, video and online material use, flip classroom, external expert intervention, use of digital hand raise and chat boxes etc. became possible right from the classrooms itself. The students received a single login to remain in classrooms the whole day and the teachers visited the scheduled classrooms according to the time-table to conduct the classes effectively with the help of these panels.



Bringing internet to classrooms with complete video conferencing solution

Making things work upto the tail end

Though the internet is not an innovation as such, the IDP-NAHEP observed seriously that most of the undergraduate classrooms need to be equipped with the internet connectivity to make interactive digital flat panels truly effective. A campaign was taken by the IDP-NAHEP to bring internet connectivity upto classrooms for all practical purposes including usage of online materials for teaching and this effort has paid off through conduct of regular online classes from the scheduled classrooms.



A multidisciplinary team of more than 100 faculty members working for the cause of IDP-NAHEP, Pantnagar

Brewing a culture of togetherness and mutual learning

A culture of multidisciplinary working, collaborative teams, multi-institutional tie-ups, has been the missing link of Pantnagar. Since the inception of the IDP-NAHEP project at Pantnagar, the culture of diversity and collaboration was adhered to and thus, more than 100 faculty members from eight different colleges of the University were identified which together formed the working team of IDP-NAHEP, Pantnagar. Till date, this has been the uniqueness, that teams of different components of the project are multidisciplinary and even in case of all student events and activities special efforts are made to involve students of all colleges, of different branches, of different backgrounds who work together, learn together, and generate an understanding and acceptability of different domains of science and society.



Promoting international collaborations and international linkages for all faculty members

A chance to engage in global learning experience

The IDP-NAHEP has not only provided opportunities to students to engage and experience international learning opportunities but to the faculty members also. The faculty members have been given an open end to explore and connect with any leading global academic institute, research organization, or centre of excellence in order to engage in meaningful research opportunities or administrative learning experience or collaborative multidisciplinary project. This first of a kind opportunity was well received and so far faculty members of different colleges of the University have received confirmation from 12 renowned international institutes namely Academia Del Lusso School of Fashion and Design, Italy, Institute of Experimental Botany of the Czech Academy of Sciences, Czech Republic, International Rice Research Institute, Philippines, Kansas State University, USA, Royal Veterinary College, London, The University of Sydney, Australia, University of California, USA, University of Illinois, USA, University of New Castle, Australia, University of Turin, Italy, Utrecht University, The Netherlands, and Wageningen University and Research, The Netherlands.



Made provision for involving international academic experts into University's teaching-learning ecosystem

Expanding the universe of the University

A structured effort has been made by the IDP-NAHEP for inclusion and involvement of international academic experts into the training, workshops, interactive discussions, and short term courses running in the University system. This will not only help the students generate a global insight, but will also help them get a glimpse of global culture, global career opportunities, and will help in strengthening the global network of the University as well. The international experts who have been a part of the IDP-NAHEP endeavours so far are, Mr. Cristophe Groell (Indian Network Co-Coordinator, DEFIAA Consortium, Perpignan), Mr. Jean Cristophe Yegri (BRECI Indian Network Coordinator, DEFIAA Consortium, La Canourgue), Mr. Philippe Despres (Deputy Principal of Agricampus, La Roque, Rodez, France), Dr. Rameshwar S. Kanwar (Charles F. Curtiss Distinguished Professor, Department of Agricultural and Biosystems Engineering, Iowa State University, USA) and Dr. Serge Savary (Director Research, French National Research Institute for Agriculture, Food and the Environment (INRAE), France).



Agreement with University of Illinois for student and faculty exchange programme

Reforging bonds with the Mother Institute

The IDP-NAHEP planned to enrol students of Pantnagar to a leading foreign university for one semester including shifting to that university with credit transfer. The pandemic disrupted the plan which led the University to search alternative ways in which University of Illinois, Urbana-Champaign, USA came forward to suggest multiple alternative ways to entertain the students from Pantnagar. The long-term understanding, signed by the Vice-Chancellors at both the ends have paved a way for student and faculty exchange programmes.



Understanding with University of Illinois for dual degree proposition for UG students of Pantnagar

Learning together from the lands of East and West

An MOU concerning the adoption of dual degree programme between GBPUAT, Pantnagar and University of Illinois, USA was made possible by the sincere efforts of the IDP-NAHEP, currently running in the university. The programme offers a golden opportunity to all the undergraduate students of Pantnagar to opt for a masters degree from the University of Illinois, Urbana-Champaign, USA therefore making the degree of complete six years including graduation and masters. It is an innovation in the present frame by offering a graduation plus masters degree to at least ten students of the University which makes the worth of our degree more attractive and prospective.

Indian Council of Agricultural Research



Certificate

SARDAR PATEL OUTSTANDING ICAR INSTITUTION AWARD-2019

(For SAU/DU/CAU category)

is presented to

Govind Ballabh Pant University of Agriculture and Technology

Pantnagar, Uttarakhand

16 July, 2020 New Delhi (T. Mohapatra) Secretary (DARE) & Director General (ICAR) (Narendra Singh Tomar) Agriculture & Farmers Welfare Minister, Gol & President, ICAR Society

A University Ranking Monitoring Committee created

Keeping a close watch on ranking parameters

For constant better outcomes, it is equally important to constantly improve. The University has shown significant improvements in the national ranking parameters in last two years which are evident through its first rank in the ICAR ranking among all State Agricultural Universities in 2019 and Sardar Patel Best Institution Award 2020. These rankings and awards are an outcome of tedious efforts by the University Ranking Monitoring Committee which charts out the areas to work upon as well as indulges in descriptive and detailed documentation. The documents of ICAR 2019 Ranking, ICAR 2020 Ranking, and Sardar Patel Best Institution Award 2020 were designed through the meticulous efforts of this team. This entire initiative was also led by the IDP-NAHEP team.



Long-term, strategic efforts in place for strengthening industry collaboration

A dedicated industry collaboration team formed for the first time in the University

The gap between industry and academia has been long drawn, however, to narrow it down, the IDP-NAHEP team has consistently worked to strengthen industry relations and formal tie-ups with them. A dedicated Industry Collaboration team has been formed through the IDP-NAHEP initiative, which has been working to look for prospective industry partners for providing opportunities of collaborative research, entrepreneurial handholding, live projects for students, employment options, and large scale working projects in University campus. Already MoUs have been signed with Indigrams Labs Foundation, Bajaj Auto, Crystal Crop Protection Pvt. Ltd., Century Pulp and Paper, Indo-Dutch Horticulture Technologies Pvt. Ltd., and many more are in progress. This entire initiative has helped in aligning the students with an industry insight and practical approach towards agriculture and agricultural technology.



Dr.Basavaprabhu Jirli



Mr. Ashish Sharma



Mr. Ramanuj Mishra



Dr. Sushant Kumar



Ms. Shweta Gupta

Introduced concept of consultant-hiring for excellence building

Seeking support of the wise ones

The concept of bringing excellence in various aspects through structured consultancy has been adopted through IDP-NAHEP where the insight and support from multiple walks of life has been hired to enhance the pace of transformation in the University arena. The consultants were hired for five components of IDP-NAHEP, namely Establishment of Virtual Lab, e-Content Development, Design and Development of Innovation and Incubation Centre, Fostering International Linkages, and IPR Portfolio. The impact has been significantly visible at all the junctures where the activities, outcome and output have been hand-held by the consultants.



Introduced the concept of College Advisory System

Inclusion of renowned stalwarts and experts for excellence generation

The academic arena in the University needed hand holding by veteran scholars from all across the country to guide and challenge the ongoing research, teaching, students' researches, quality consciousness, linkages and collaboration etc. for which the IDP-NAHEP brought a fresh proposal of constituting the College Advisory System with external stalwarts and experts. The College Advisory Committee will meet at least twice a year at Pantnagar and will analyse the status to do a SWOT analysis followed by a series of interactions with the administration, faculty, students, project leaders, researchers and other stakeholders to share their insight on every aspect.



A systematic intervention of skill development with more than 75 trainings, workshops, and interactive sessions

Budding curiosity in young minds towards skilling and upskilling

One of the prime thrusts of the IDP-NAHEP has been to generate a systemic proposition of skill development of the undergraduate students in order to inculcate in them the right set of higher order cognitive skills, soft skills, and employability skills. Through planned, scientific interventions of the academic component of IDP-NAHEP, a series of short and long term trainings, workshops, interactive sessions were organized where leading academic experts, industry practitioners, entrepreneurs, policy makers, etc. were invited. Moreover, this systematic, organized effort resulted in massive awareness generation among the student community of Pantanagar regarding recent market developments, industry demands, latest technological advancements which has ultimately resulted in bridging the employability gap which persisted.



Introduced concept of structured evening and night classes for non-stop capacity building programmes

The charming evenings for soft skills, language skills, cognitive skills

The IDP-NAHEP provided an opportunity to the University students to avail the evening classes, regularly conducted at NAHEP building up to 9:00 pm before the pandemic lockdown. The vocational and skill development courses, being conducted on different subjects, attracted scores of students from all the colleges which made vibrant evenings of learning and enjoying at NAHEP building followed by a dedicated bus service to carry the students back to the hostels.



Certified elementary and advanced course in French language for the University students

Une langue différente, une vision différente

A language is a representation of ideas and thoughts and thus of culture and civilization. Among the initial activities of the IDP-NAHEP, language classes were the first long-term skill building initiative for undergraduate students of the University. It initiated with certified elementary course in French language for the University students. Students undergo 100 hours of classes to learn the basics of oral and written communication in the language. On successful completion of classes and examination of A1 course (beginner's level), the students take another 100 hours of classes, that nurtures them in advance concepts of grammar and linguistics in the given language. The classes are conducted by the experts, utilizing a variety of pedagogical tools to train the students. Apart from employing audio-visual aids, classroom interventions such as role-plays, conversational worksheets, story-telling, and pronunciation exercises play an important role in enthusing the students. Moreover, regular mock tests and practice sessions enable the students to learn the language effectively. A total number of 78 students have registered themselves to learn French language and total 33 students have appeared for the examination of A1 Level and passed the online examination with flying colors. The next batch of Elementary Course in French Language has started.



Certified elementary and advanced course in German language for the University students

Sprachkenntnisse sind die Tür zur Weisheit

The foreign language classes of the IDP-NAHEP is one of the most popular initiatives of the project. These classes received remarkable enthusiasm by the Pantnagar student fraternity. In continuance with French language classes, Certified Elementary Course in German Language has also been introduced to the University students. The classes are conducted during the evening hours, from 6 pm to 8 pm and students have to undergo 100 hours of classes to learn the basics of oral and written communication in German language, post which the beginner's level examination is conducted marking the completion of A1 course. Certified advanced course in German language is offered to the students on successful completion of classes and examination of A1 German course, which facilitates students in taking self-practice of pronunciation, phonetics and grammar in the language, besides human-mediated experiences. A total number of 69 registered students are learning German language and 34 students have already passed the A1 Level examination.



English language proficiency classes for the University students

Language exerts hidden power, like a moon on the tides

Along with the foreign language classes, English language proficiency classes have been initiated separately to nurture the University students in fundamentals of spoken and written English. The 60 hour remedial classes have been specially designed to suitably focus on grammar and pronunciation. Till date, more than 350 students have benefitted from the course and classes are running for four days in a week in the evening hours after the completion of regular scheduled college classes of the students. The classroom pedagogy involves several interactive activities such as role-plays, story writing, vocabulary enhancement and word pronunciation. The learners are also subjected to home-based assignments and methods of assessment to quantify the improvement in performance and enhance learning outcomes. The response and participation of the students for English language classes has been overwhelming so far, similar to the other two languages.



Certified courses in IELTS/TOEFL for the University students

Preparing to grasp international opportunities

University students to get admission in foreign universities for higher studies, thus broadening their academic experience. A special vocational course has been launched by the IDP-NAHEP to train interested University students for IELTS/TOEFL for which a batch of 50 students has been started. This training course of two-month duration is an amazing opportunity to prepare for the world of international education. This is a novel undertaking in Pantnagar curriculum and is heartily appreciated by the University students, with the dream to study abroad. It is planned to take another batch after the completion of the ongoing group.

































































Exclusive remedial classes running across the colleges, led by illustrious alumni

The present learning from the past for the future

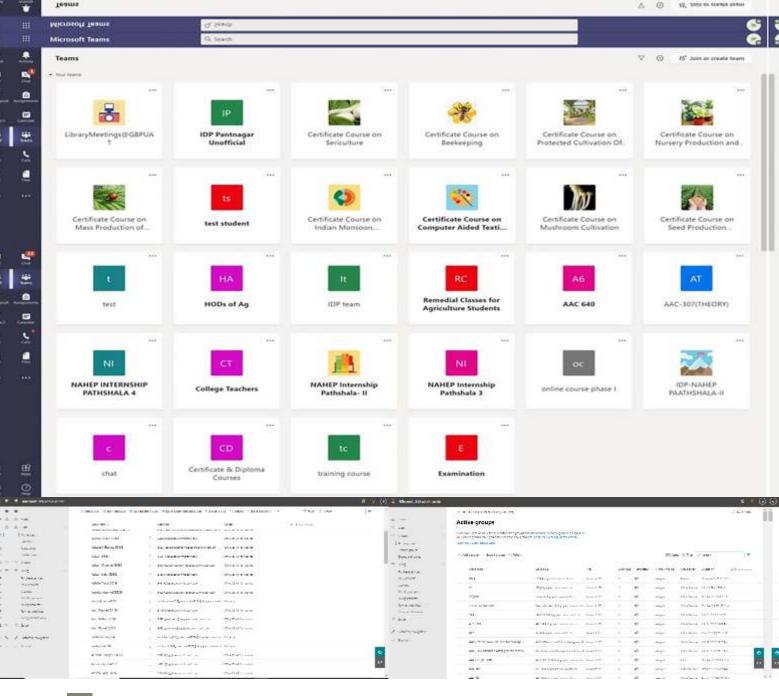
It's a design that works. Remedial Classes were run earlier also but the IDP-NAHEP designed the Remedial Class with a difference. The undergraduate courses from each college of the University were divided into modules and each module was aligned with recently passed alumni who scored brilliant in JRF/SRF or ARS examination. Total forty alumni were selected to support different courses to run for next two months and the curious-to-learn undergraduate students registered for the classes. The thrust was to provide fundamental clarity in the courses in the most pragmatic manner. It was overwhelming to see more than 400 students enrolling for the classes and stretching to harvest maximum benefit.



Took initiative to equip the faculty members for online teaching-learning platforms

1000 man-hours of training with more than 300 participants

It was tremendous on part of the IDP-NAHEP to take the instant and firm step for faculty capacity building in as early as March 2020. The lockdown was declared and the students vacated the campus to move to their homes. Online teaching was a totally new proposition for the faculty members and the students, as more than 95% faculty members and students had not experienced it before. IDP-NAHEP explored the possibilities and decided to go for faculty training to utilise Zoom app for teaching. Amid lots of suspicions, confusions and doubts, a series of Zoom app utility trainings were launched in which faculty members were trained to utilise the app adequately using screen-sharing, chat box, hand raise, video sharing, synchronous lectures etc. The faculty were also provided support and hand-holding by the IDP-NAHEP resource persons on one to one basis which raised the confidence of the faculty members to shift to the online platform. It was a herculean challenge and more than 1000 man hours were invested in this capacity building marathon, led by the IDP-NAHEP. It resulted in adequate and effective shift to online platforms in the pandemic period due to which uninterrupted teaching became possible in the University.



Bringing Microsoft Teams app in University periphery

Cent percent students and faculty members connected on this digital platform

The lockdown pushed the academic fraternity to explore online options for teaching, seminars, viva, meetings and other academic obligations. The IDP-NAHEP at Pantnagar analysed the situation critically and decided to go for a uniform solution for cent percent faculty members and students of the University. This is how Pantnagar University moved on its academic activities in the digital mode and decided to implement the Microsoft Teams software application to conduct all its academic activities including regular classes, research, seminars, examinations, guest lectures, workshops and all other related tasks. Licensed Microsoft Teams accounts were procured and activated for all the faculty members and students by the IDP-NAHEP team. Right from generating a system of online teaching for all the faculty members and students, to training of all the faculty members to conduct online examinations for nearly 4000 students, the IDP-NAHEP team worked tirelessly to facilitate the University to reach to a new age of digital structures and functions. Now, it is wonderful to observe the newly emerged normal of hassle-free online classes in the ongoing semester.



Faculty members and students' training on use of Microsoft Teams

Learning to go all digital

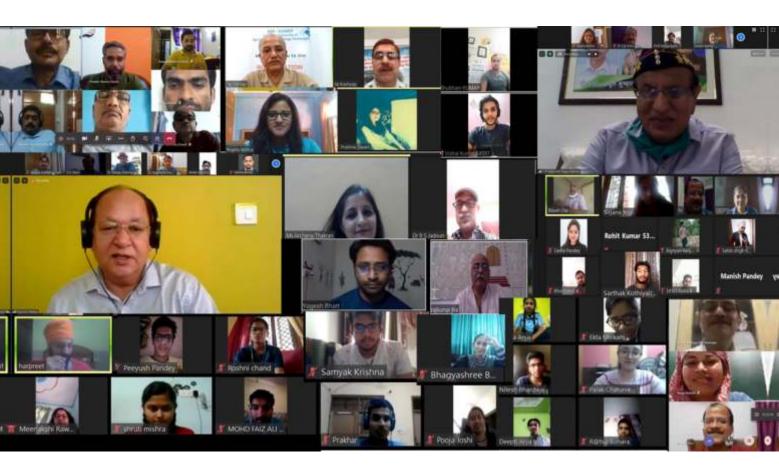
The IDP-NAHEP team took a marathon effort of capacity building of faculty members across the University on use of Microsoft Teams to orient them to the use of the online platform and also to various technical intricacies of organizing classes on an online platform. Training programmes were conducted college-wise and in small groups for effective learning outcomes. Till date, more than 4000 man-hours have been involved across the university which was led by PI, IDP-NAHEP Dean Dr. S.K. Kashyap himself with the IDP-NAHEP team of experts. It was followed by training and personal counselling to the faculty members as and when required to provide them round-the-clock assistance. The IDP NAHEP is making consistent efforts for capacity-building of faculty members and students of the University in the usage of these technologies through workshops, demonstrations and interactive sessions since then.



Facilitated online semester final examinations

Completed absolutely hassle-free with 99.5% success rate

To implement an online system of examination conduction during the shadow of pandemic, the IDP-NAHEP stood at the forefront to let the examinations be held and get completed successfully amidst lots of doubts and debates on prevailing problems of network availability and other issues. Online examination conducted at Pantnagar emerged as a nation-wide success story where about cent percent students of undergraduate, M.Sc. and Ph.D. confronted the examinations successfully to complete the second semester of session 2019-2020. The examinations were conducted over a time span of 40 days and for this, IDP team supported the faculty members and students in all possible ways including training of faculty members to conduct examinations, creating online question papers, uploading and downloading of answer scripts and other troubleshooting wherever needed to make this digital experience worthful which indeed brought forth a much-needed, additional capability to the University which will help in pursuing a long path of digital education. College of Technology, Pantnagar also made significant endeavours at the technical front and made diligent contribution in training of faculty members for the smooth execution of examinations through G-suite. The University not only released the examination results in the next one week but also started the new semester for undergraduate, post graduate and doctoral programmes effectively from 1st October, 2020.



Regular hand-holding for the digital challenges and online classes in ongoing semester

Undaunted responsibility to take the University ahead successfully in new age teaching-learning

It was indeed a challenge to put the digital facilities to proper use through creating a system of troubleshooting as and when required. Teachers confronted with internet connectivity problems, content creation challenges, login id aligned challenges, technical glitches during the classroom teaching and at other steps. The IDP-NAHEP team incessantly stretched to provide solid backup support as and when required on a 24x7 basis with utmost commitment. It was demanding and pressing as the University is big and the IDP-NAHEP team is limited with their scheduled and mandated tasks. Still, the tremendous stretching done by the IDP-NAHEP team led the experience to a successful transition without any felt problem.

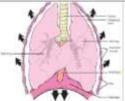


More than 500 unique e-content modules developed for undergraduate courses

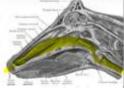
Getting ready to learn anytime, anywhere

The 360-degree learning environment is the need of the hour. Looking into it, the IDP-NAHEP took a huge initiative to create textual, video, animated content for the UG students in e-content form to be made available round the clock for easy access. More than 100 faculty members have collectively made a comprehensive effort to create distinctly designed e-content for ICAR accredited undergraduate courses of the University taught in different undergraduate programmes. The IDP-NAHEP team has led this endeavour to create modules of shortlisted 52 courses. Effort has been made to develop each module in quite an interesting format so that the students may get learning and in-depthness through self-study. The content is being created in interactive workbook format with question-answer, references, cases, illustrations, learning activities and other interactive linkages.

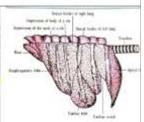




 Expansion of lung volume during inspiration causes air to flow in.



 Air (rich in oxygen) is inhaled from environment, and carried from nasal cavity and pharynx to trachea



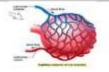
3. Oxygen reaches lungs.



 Within lungs, oxygen is carried in bronchi.



 Ultimately, oxygen reaches alveoli (zoom-in).



Focus on one alveolus and its capillary network (further zoom-in)



 Further zoom-in to respiratory membrane.



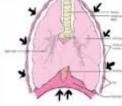
 Oxygen (red) diffuses through respiratory membrane and enters RBC.



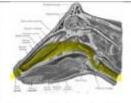
 As RBC gets saturated with oxygen, it appears red in colour.



 Carbon dioxide (depicted with blue colour) leaves the RBC and diffuses across the respiratory membrane, to enter alveolus, with simultaneous entry of oxygen in the RBC.



 Decrease of hing volume during expiration causes air to flow out.



12. Carbon dioxide is exhaled into environment, (alveolus → bronchi → trachea → pharynx → nasal cavity → environment)

Content development for virtual display for UG course content of the University

Diving deep inside the picture to explore the intricacies

It was a tremendous task to identify the points in undergraduate (UG) course content for the entire University where AR/VR support may add to the quality of teaching and extent of learning. The IDP-NAHEP took an extensive research across the contents of different UG courses to decide the topics where AR/VR content could be developed. An in-depth script has been developed for all those topics to translate it in AR/VR content.



















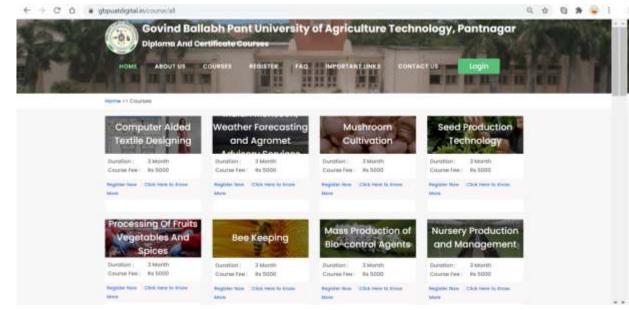


10 online certificate courses launched in two months

Opening the windows of Pantnagar for learners across the world

The first agriculture university of India, GBPUAT, Pantnagar presented the first ever three months online Certificate Courses. Launch of five fascinating courses viz. Mass Production of Important Biocontrol Agents, Beekeeping, Sericulture, Nursery Production and Management, and Protected Cultivation of Horticultural Crops, marked the first phase of launch on 25th September, 2020 followed by another five courses viz. are Mushroom Cultivation, Processing of Fruits, Vegetables and Spices, Indian Monsoon, Weather Forecasting and Agromet Advisory Services, and Seed Production Technology launched on 25th October, 2020. The golden opportunity to earn learning through these Certificate Courses through a single click on www.gbpuatdigital.in along with an entire world of knowledge, expertise and great learning experience attracted a fairly large number of registrations which includes undergraduate students, masters scholars from agricultural universities, progressive farmers, agricultural entrepreneurs, homemakers, industry practitioners, and other enthusiast learners from all across the world. This entire novel initiative was spearheaded by the IDP-NAHEP team.





Dedicated interactive portal for certificate and diploma courses launched

Making learning accessible for all

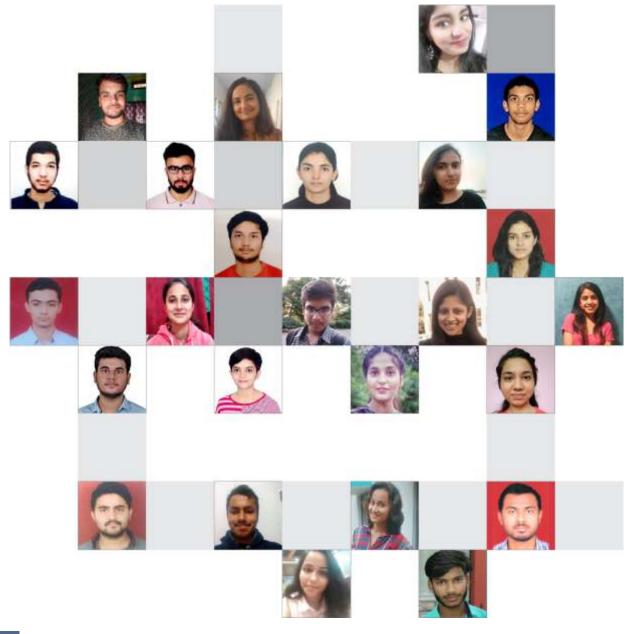
Amidst the pandemic, the University opened its windows through Online Certificate and Diploma courses for any interested learner from all across the world with the initiative of the IDP-NAHEP. Ever since the genesis of the University, it is for the first time that University would allow anyone and everyone to gain from its intellectual expertise without any boundaries of formal eligibility criteria. The Academic Council of the University has approved these courses and the IDP-NAHEP team launched a specially-designed online platform for these courses for smooth and hassle-free registration, content sharing, evaluation, webinars as well as mutual interaction. It provides learners an interactive and flexible environment for 360 degree learning, under close monitoring of course instructors. The online platform can be accessed at www.gbpuatdigital.in



Launched four consecutive 2-months NAHEP Internship Pathshala for UG students

First time online paid internship started

The IDP-NAHEP started an all-innovative NAHEP Internship Pathshala for undergraduate students of the University to keep them in capable hands for two-months to nurture their higher order cognitive skills in a project-based learning environment. It was a maiden effort from the University to accelerate and brush up the undergraduate students from the whole University with the new age education and knowledge, and to develop their personal traits for world requirements according to the ever-challenging and demanding situation. The selection test for the internship consisted of two stages which tested the verbal skills, general aptitude and comprehension skills of the incumbent students. It gathered a huge response from the students and finally 15 student interns were selected for each Pathshala. Task groups were formed with several components in which selected mentors guided the interns to think critically, plan, create calendar of work, research, execute, document, write, present and formally report according to their assigned tasks. The interns were also provided stipends for the duration.



Encouraging participatory atmosphere via golden points scheme

Life is a flow, and participation makes a person glow

The student community of Pantnagar is huge in number and diverse. In order to enhance the reach of the IDP-NAHEP activities, a Golden Points Scheme was launched in the initial phase of the project in October 2019 itself. For participation and successful completion of workshops, trainings, seminars, short courses, long courses, and any endevaour of the IDP-NAHEP, students were awarded certain points. Every month the top 10 scorers of Golden Points are declared and are being provided with NAHEP goodies, get-together dinners, special expert sessions, and other gifts.

IDP-NAHEP NOHEP T Pantnagar Updates

G. B. Pant University of Agriculture & Technology Pantnagar 263145, Uttarakhand

No. 6 March 2020

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Creating Interface to Learn from Intellectuals Around the World

The Indian custome of education host always resonanced as sharing of innovatives and windows across the Lands is order to prevente playably of mostifts and insight which lands the harmonity towards excellence. The incident universities have always been waiting scholars from different readment of research and exempting entires. divelopations with an extraordinate from other recommendation of the south and appareting comments of the south and appareting the financial southers with an extraordination of the south and the institutions and scholars are footing powerooses strong supports in the world and the institutions and scholars are footing. provisional strong impetual in the wastal and the institutional and schools can be inserted to be early interfered allignments and maintain popular approaches. A recent wasta to believe by of attends, but along withing colleagues from the bose, helped us expected with academic lain, schemists, practitioners from service disciplines and consideration that wastal. The insurance with each of their meant lain property of correct with externician; is entered, procurating their regarding prospects of



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A New Era of Academic Colleboration Begins with University of Illinois through IDP Efforts

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The IDP town led by Wor-Chancellar Dr. Tel Partial visited Shownyshy of Stimon in Urbana Champaign, LEA for revitaciang the decades old relationship, it is to mention that the University of Hands had belged Portragor to evolve as the first Land Grant Undversity of India by 1960 and a beam of Professors from Italicas worked or Poetragor to export the structure and establishment for reary than a decade. Many faculty excepters and students of Partinger were trained at Almois those chapt to tree go to brilliary resourchers and academicians.

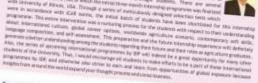




Generating Opportunities for Global Exposure through IDP Initiatives

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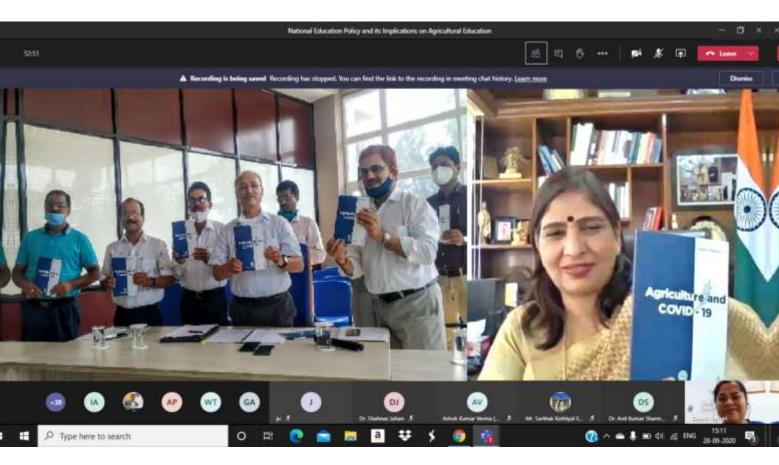
Keep visiting the University Centre for updated



Wonderful and consistent documentation practices through weekly radio programme, monthly newsletter and yearly annual report

What gets documented, gets preserved

Regular documentation and attractive showcasing of all the activities and initiatives has been accomplished to make sure the sharing of project insight with all the stakeholders and the beneficiaries in quantitative and qualitative terms. It also helped the campus to discuss and analyse the IDP-NAHEP activities in true terms and also to draw long-term inferences from many of the pragmatic activities. The planned documentation and showcasing covered all the activities and outcomes of the project on weekly/monthly/annual basis with the insights of the organizers, facilitators as well as the feedback from the students. Total 32 weekly radio programs have been broadcasted by the local FM Pantnagar Janvani 90.8 MHz, the community radio station of Pantnagar; 14 monthly newsletters and one annual report have been published till date.



Strategy building, policy implications booklets published

Thinking globally, working locally

A policy book named 'Agriculture and COVID-19' has been published by the College Core Action Group, College of Agriculture with the collaboration of IDP-NAHEP, Pantnagar. The policy booklet recommends the solutions of agricultural gaps in the context of current pandemic situation, agri-value chains, options to combat the impact of pandemic on horticulture crops, Himalayan agriculture, livelihood of farmers, industry trends, and the overall effect of COVID-19 on Indian agriculture. The second Policy Note on Hill Farming and the third one on Blueprint of Agricultural Universities under National Education Policy are also under preparation.



Instigating a sense of sensitization towards environmental and social safeguards in the academic arena

When nature is prosperous, everything else is gorgeous

The University has always been concerned about the environmental and social safeguards, however the IDP-NAHEP took initiatives to sensitize the University community towards issues which were largely overlooked. Some of the much needed initiatives include construction of green washrooms in market areas and other field areas of the University such as Crop Research Centre, Practical Crop Production Fields, etc. and installation of clean water drinking facilities. These are some of the areas which are largely visited by the students and for long duration at times 8-9 hours per day. These initiatives have paved the path for systematically addressing the environmental and social safeguard mandates of the University.



Ramps in all the Colleges, Library, Administrative Building, University Centre and other important places

Bringing equity, bringing opportunities

Providing barrier-free access to important places in the University, especially to persons with disabilities is a way to ensure inclusive and equitable education opportunities for all. The IDP-NAHEP team made concerted efforts for this by constructing ramps and railings across all important public places in the University campus to provide an easy mobility option to the disabled persons. Construction of ramps and railings has been done in all the colleges and other important buildings.















Close Circuit TV Camera installed in whole campus for security and surveillance

Safety is precious, safety is priceless

Pantnagar University campus is one of the largest residential campus of India. Safety and security of the campus premises is an issue of great concern. The IDP-NAHEP introduced a safety and security surveillance system through ANPR Bullet Close CircuitTV cameras in order to continuously monitor major public spaces such as college roads, hostel roads as well as other important spaces. The initiative ensures an encouraging environment for the University students making them comfortable, promoting social and creative learning and also, promises a sense of security to the other residents of the University Campus.



Waste water recycling, purifying and harvesting structure in Gandhi Bhawan

You save water, the water saves you

To conserve run-off water in the campus and recharge ground levels, the IDP-NAHEP Team has been working on giving a functional model of rainwater harvesting system in the University campus for recycling, purification and harvesting of waste water. First such system has been set up at Gandhi Bhawan hostel of the University. The system will facilitate recycle and reuse of rain water for all practical purposes of usage in toilet flushes, hostel gardening, and wherever suitable. This model in due course could be replicated in other hostels as well.



Organic compost machine for quick composting in Gandhi Bhawan

There is no wastage concept in nature, let us adhere to it

Recycle, reuse and reduce have always been the mantra for environmental sustainability and now with the efforts of the IDP-NAHEP, the University is moving a step ahead in this direction. A compost unit has been set up at Gandhi Bhawan hostel of the University. This organic compost unit will convert all the biodegradable waste generated in the hostel premises into a quick compost which will be further utilized for agricultural purposes. Also, this initiative would be an effort to reduce the use of chemical fertilizers and better disposal of organic waste generated by hostels and other buildings in the campus. There is a huge opportunity to scale up this activity across the University.



A model of non-disrupted electric supply through solar support

The Sun is ready to support, so are we, ready to take its support

The energy-efficient building is a requirement of the time. The IDP-NAHEP created a model at Pantnagar by creating a solar energy structure at the roof top of NAHEP building to support the complete energy requirement of lights, fans, interactive panels and computers across into the three floors. The structure is 15 kW capacity solar panels which is a solution to any electric failure situation as well. It is effectively working in the NAHEP building for more than one year. If similar efficient solar energy structures are created across the University buildings then there could be a saving of thousands of watts of energy and will also save thousands of litres of diesel consumed to support the generators to provide backup support to the colleges and laboratories alongwith non-disrupted electric supply across day and night.



LEDs in NAHEP building and classrooms for energy saving

Save the energy for future synergy

The energy-saving has been an utmost agenda under the IDP-NAHEP mandate to build an environment-friendly culture. The University Centre as well as all the thirty digital classrooms developed under the IDP-NAHEP has been equipped with LED lights by replacing the traditional structures to save energy and to give a message of energy-saving outlook and initiatives to be adopted across the campus.



Sanitary napkin vending machine being installed

You don't empower by holding conventions, but by doing actions with the right intentions

The University was lacking any Sanitary Napkin vending machine across the campus which has been introduced through the IDP-NAHEP in the colleges. It is a basic prerequisite to support the social equity and social concern which has been catered by the IDP-NAHEP outlook. The machines are to be installed in the washrooms in each College.



Institutional Development Plan
National Agricultural Higher Education Project
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