

SDG 4: Quality Education

SDG 4 in India: Quality Education

Sustainable Development Goal 4 (SDG 4) aims to ensure inclusive, equitable, and quality education for all and promote lifelong learning opportunities. India has made significant strides in improving access to education, increasing enrollment rates, and reducing gender disparities in schools. However, challenges like infrastructure gaps, teacher shortages, and unequal access in rural and marginalized communities persist.

Efforts by the Indian Government to Achieve SDG 4

1. **Right to Education Act (RTE), 2009:**
 - The RTE mandates free and compulsory education for children aged 6 to 14, ensuring universal access to primary education.
 - It includes provisions for infrastructure development, teacher quality improvement, and equity in education.
2. **Samagra Shiksha Abhiyan:**
 - This integrated scheme supports school education from pre-primary to higher secondary levels.
 - It focuses on infrastructure upgrades, digital learning, teacher training, and inclusion of marginalized communities.
3. **National Education Policy (NEP) 2020:**
 - The NEP emphasizes holistic and multidisciplinary education, vocational training, and a flexible curriculum.
 - It aims to achieve universal foundational literacy and numeracy by 2025 and improve higher education access through increased enrollment.
4. **Digital Initiatives in Education:**
 - Platforms like **DIKSHA**, **e-Pathshala**, and **SWAYAM** provide digital learning resources and online courses to enhance access and quality.
 - The **PM eVidya Program** bridges digital divides with multi-platform educational delivery during and after the COVID-19 pandemic.
5. **Mid-Day Meal Scheme:**
 - This program provides free meals to schoolchildren to enhance nutrition and encourage school attendance.
 - The initiative plays a vital role in addressing child malnutrition and improving learning outcomes.
6. **Beti Bachao Beti Padhao:**
 - This initiative aims to address gender disparities in education by promoting the importance of educating girls and improving their access to schools.
7. **Higher Education Initiatives:**
 - The **Institutions of Eminence (IoE)** scheme encourages Indian universities to achieve global recognition and excellence.
 - Scholarships like **National Means-cum-Merit Scholarships** and other financial aids reduce barriers for students from economically weaker sections.
8. **Skill Development Programs:**

- Initiatives like **Skill India** and **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** equip youth with employable skills, promoting lifelong learning opportunities.

SDG 4 at the University of Petroleum and Energy Studies (UPES)

UPES aligns with SDG 4 by fostering a culture of inclusive and quality education while emphasizing innovation, sustainability, and lifelong learning. The university actively supports global and national education goals through its academic programs, research initiatives, and community engagement.

1. Inclusive Education:

- UPES provides scholarships and financial aid to ensure access to education for students from diverse socio-economic backgrounds.
- Initiatives like the **Shakti Scholarship** empower female students by promoting gender parity in education.

2. Innovative Academic Programs:

- UPES offers multidisciplinary and industry-aligned courses in energy, technology, law, and business, preparing students for global challenges.
- Experiential learning methods, including internships, live projects, and research opportunities, ensure students acquire practical knowledge and skills.

3. Digital Learning Integration:

- The university leverages technology through platforms like its **Learning Management System (LMS)** to provide online and hybrid learning options.
- Digital tools and virtual labs enhance the learning experience, making quality education accessible to all.

4. Research and Development:

- UPES encourages faculty and students to engage in cutting-edge research that addresses real-world problems.
- Collaborative projects with industries and international institutions foster innovation and skill development.

5. Skill Development and Lifelong Learning:

- Programs such as **UPES Plus** and workshops equip students with additional certifications, soft skills, and technical expertise.
- Lifelong learning opportunities through short-term courses and executive education benefit both students and professionals.

6. Community Engagement:

- UPES actively engages with rural communities to promote education through initiatives like school adoption, free education camps, and mentorship programs.
- Student organizations lead campaigns to enhance literacy and support underprivileged children in accessing quality education.

7. Supportive Campus Environment:

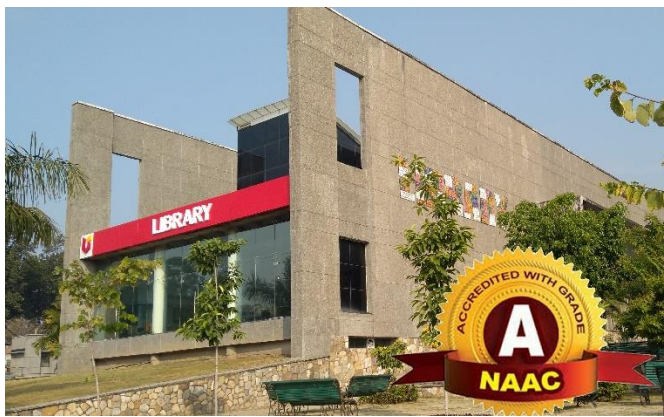
- The university provides a nurturing environment that fosters critical thinking, creativity, and collaboration.
- Counseling services, peer mentoring, and extracurricular activities contribute to holistic development.

Impact of UPES's Contributions to SDG 4

UPES exemplifies its commitment to SDG 4 by providing inclusive and high-quality education that prepares students to tackle global challenges. The university's focus on academic excellence, research, and community service ensures that it contributes meaningfully to India's educational landscape. By bridging gaps in access and fostering innovation, UPES aligns its efforts with national priorities and global aspirations for quality education.

UPES Library

<https://library.ddn.upes.ac.in/default.html>



The UPES Library, with its wide range of collection of knowledge resources and innovative information services, fills an essential requisite in the intellectual pursuits of our students, faculty and the surrounding community. UPES Library, a hybrid Centre with the state-of-the-art technological applications holds knowledge resources predominantly related to engineering, science & technology, management, law, Allied Health Science and allied subjects.

Library at a Glance

214886

Print Books

274078

E-Books

126

Print Journals

21624

E-Journals

43558

E-Proceedings

5098

E-Standards

64

E-Databases

426

Thesis

3189



Dissertations

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Research tools

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E-Databases

- Scopus
- Web of Science
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- Elsevier
- McGraw Hill
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- Pearson Education
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Open E-Resources

- Union Budget 2021-2022
- Economic Survey 2021-2022
- National Digital Library (NDLI)
- NPTEL Video Lecture
- Census of India
- Virtual Lab (MHRD)
- COVID19-resources

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Reference Tools

- Mendeley
- EndNote
- Zotero



E-Learning

- Coursera
- Blackboard
- SWAYAM MOOCS
- e-PG Pathshala
- NPTEL Online Courses
- NPTEL Online Certifications
- Swayam Prabha
- IIM-B Online Courses



Plagiarism Detection

- Turnitin
- Ouriginal
- UGC Regulations 2018
- UGC Regulations 2020



UGC

- National Archives of India
- UGC Academic Integrity
- UGC-CARE Journal List
- Deeksharambh
- UGC Paramarsha Brochure
- UGC Quality Mandate



INFLIBNET

- ShodhGanga
- ShodhGangotri
- IndCAT: Union Catalogue
- IRINS
- Vidwan Expert Database
- e-ShodhSindhu



Open ETDS

- EBSCO Openthesis
- NDL of Theses & Dissertations
- OpenThesis
- ProQuest Dissertations & Theses
- SSRN

UPES on Community

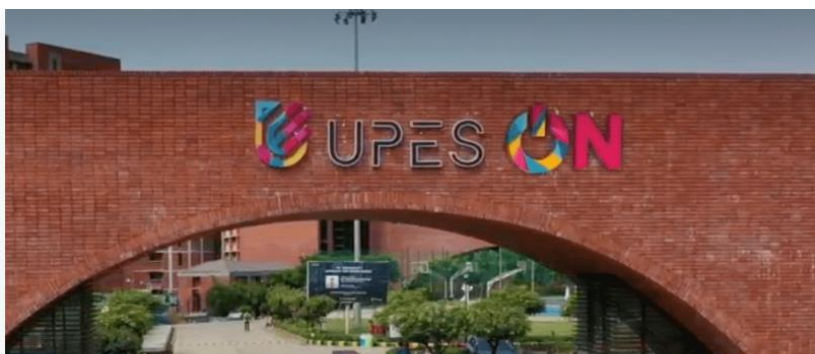
<https://upesonline.ac.in/alumni> [1]

Welcome to the UPES On Community

Share, collaborate, learn and connect with our 50,000+ alumni network

HOW OUR ALUMNI BENEFITS

- Free Access To Additional Programs
- Access to Career Services
- Digital Libraries Privileges
- Attend University Events
- Enjoy Networking Opportunities



1 Free Access To Additional Programs

Enjoy complimentary access to any UPES ON program for a period of five years after successfully completing your enrolled program. Tuition fees are discounted by 35%, ensuring your pursuit of knowledge never ceases.

JOIN US IN CREATING AN IMPACT

Our university is committed to building strong ties with our valued alumni.

Here's how you can engage:

- Attend and contribute guest lectures
- Contribute to University committees/advisory boards
- Take part in mentorship and intern programs
- Participate in alumni fundraising campaigns
- Volunteer for community-building activities

Keep yourself Up-To-Date with these Interesting Online Courses

<https://blog.upes.ac.in/keep-yourself-up-to-date-with-these-interesting-online-courses/> [2]

MANSHA DHINGRA · SEPTEMBER 27, 2019



Nowadays, receiving a good quality education with a constant focus on life-long learning has become very important. Thanks to the world wide web, many educational institutes have started adopting the method of online teaching. Online education has become very common now and apart from the regular classroom learning students pursue some courses online as well. This is even for youngsters who have started working and do not have time to go to college regularly. Online certification is an excellent way for students to upgrade their skills. Students pursue some online certification courses which help them in their workplace in the long run.

So first let us understand what is an online certificate? The online certificate allows students to obtain qualifications in a particular field without spending enough time required as compared to a traditional degree. These online programs do not take much time and can be completed in a few months. These courses help students learn new skills, critical thinking, evolve and build understanding. This helps students utilize their free time and enhance their resume.

Online Courses



Let us have a look at some online certification options for college students:

Digital marketing: Pursuing an online marketing course will really prove beneficial for students in the future. Digital marketing is a booming field in the industrial sector. Students will acquire knowledge about digital marketing skills which will give them an edge over other students.

Content writing: We all know content is the king. A content writing course online will be helpful for students no matter what their field is. It will enhance their writing, listening, comprehending and reading skills. Content writing combines SEO tactics with creative writing skills which will help them in all the spheres like the digital platforms or any other portal.

Graphic designing: The need for graphic designers is rising in almost every sector now. With the help of graphics, you can explain anything more conveniently and it becomes appealing as well. Blogs, social media, start-ups and films and many other sectors need graphic designers.

Technological skills: IT is one of the most sought-after courses anyone could do. IT training courses include clear and simple lessons on how to develop and manage your software and maintain vital IT systems across computers and phones. In today's digital world, basic knowledge about technology is extremely important. This will help you upgrade yourself.

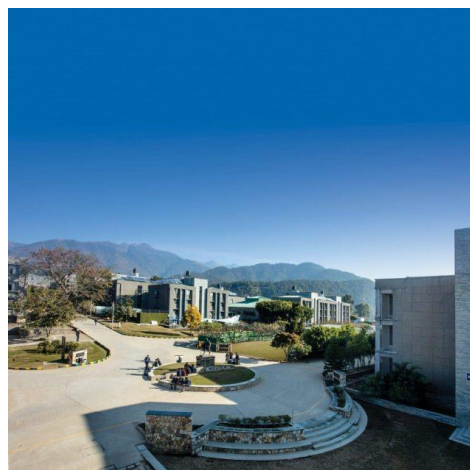
The art of effective presentation: Presentation skills are extremely important in all walks of life. The ability to deliver the message efficiently and effectively and in a way, everyone understands presentation is required all the time. In this course, students will learn strategies to master your speaking skills, presentation skills, and communication skills.

[UPES provides training in online teaching to primary school teachers](https://garhwalpost.in/upes-provides-training-in-online-teaching-to-primary-school-teachers/)

<https://garhwalpost.in/upes-provides-training-in-online-teaching-to-primary-school-teachers/> [3]

By Our Staff Reporter

Dehradun, 11 Jun: The present scenario demands increased technology driven learning and teaching methodologies. To familiarise teachers with the potential of online teaching, UPES under its CSR Project, 'Dronasthali', organised an Online Workshop on "WhatsApp – A Tool for Teaching and Learning" for the elementary school teachers of Rashtriya Prathmic Vidhyalaya – RPV. Inaugurated by Chief Guest Seema Jaunsari, Director, Academics, Research and Evaluation Directorate of Education, Uttarakhand, the workshop was aimed at educating teachers in the use of WhatsApp to ensure effective teaching, learning, training, and assessment, in synchronous mode when, both, the teacher and learner are present and in asynchronous mode when learners can work on posted material in their own time. The training was conducted by UPES faculty and was attended by primary teachers of 17 different schools of Dehradun District.



One of the participants, Kanchan Kohli, stated, "It was a well-designed workshop for anyone who wants to enhance their understanding of WhatsApp functionalities and efficient ways to teach online." Another attendee, Arohi Goyal, added, "Training workshops like these help us broaden our outlook and harness the potential of platforms like WhatsApp for effective teaching. The workshop addressed all notable queries that an educator may face regarding the shift of educating young minds virtually." UPES runs various initiatives through its holistic social impact programme for education, women empowerment, and community development. Some of these initiatives are Utthan (The Smart Village Project); Utkarsh (Overall development of Schools); Dronasthali (Centre for Excellence for Teachers Development through Blended Learning models and Life-skills development) and Protsahan (Fully sponsored higher education opportunity at UPES for underprivileged bright students).

National Academic Depository (NAD)

<https://www.upes.ac.in/national-academic-depository-nad> [4]

National Academic Depository (NAD) is born out of an initiative to provide an online storehouse of all academic awards. National Academic Depository (NAD) is a 24X7 online storehouse of all academic awards viz. certificates, diplomas, degrees, mark sheets etc. duly digitized and lodged by academic institutions/boards/eligibility assessment bodies. NAD not only ensures easy access to and retrieval of an academic award but also validates and guarantees its authenticity and safe storage.

How to Register on NAD?

The users of the NAD system are free to select Digi locker as the sole depository for NAD.

The users should select Digi locker as the preferred depository for registering into NAD. The user may click on the link <https://nad.digitallocker.gov.in>, which shall re-direct them to the depository's website. Further details relating to the registration process are available on the website.

For more information about NAD: <https://nad.gov.in/>

Digi Locker

Digi Locker is a provider of NAD services and aims at the 'Digital Empowerment' of citizens by providing access to authentic digital documents to citizens' digital document wallets. The issued documents in

the Digi Locker system are deemed to be at par with original physical documents as per Rule 9A of the Information Technology (Preservation and Retention of Information by Intermediaries Providing Digital Locker Facilities) Rules, 2016.

Maintaining academic awards in an electronic depository would provide benefit to educational institutions, students and employers by enabling online access to academic awards which will eliminate the need for persons to approach educational institutions for obtaining transcripts of such awards for verification. It would also eliminate fraudulent practices such as forging of awards, by facilitating online verification thereof and maintaining the authenticity, integrity and confidentiality of the award.

Roles & Responsibilities of Students

Students shall:

- Register on NAD-Digi Locker by providing Aadhar details.
- Avails Digi Locker ID in case of non-availability of Aadhar
- Submits Aadhar / DigiLocker ID to AI for verification and seeding into award data
- Views and accesses all awards online at any time in a single account
- Student can:
- View/download digitally signed awards
- Request a printed copy of the certificate
- Approve/reject the request of any verifier for access to his / her certificate
- Send a copy of the certificate to any verifier

Benefits for Students:

- Immediate availability of academic awards upon upload by Academic Institution
- Online, permanent record of academic awards
- No risk of losing, spoiling, or damaging the academic awards
- Anytime, anywhere and convenient access to academic awards
- Important Documents Anytime, Anywhere!
- Authentic Documents, Legally at Par with Originals
- Digital Document Exchange with the consent of the student.
- Faster service Delivery- Government Benefits, Employment, Financial Inclusion, Educational admission, Health.

Guest Lectures

<https://www.upesaapg.org/guest-lectures> [5]

Success is assured when the learning is accompanied by skills and to develop skills, it is important to have an insightful exchange of knowledge and experiences. Keeping the importance of this in mind, UPES AAPG Student Chapter organizes a series of guest lectures delivered by renowned industry experts of the oil and gas domain, to build a realistic platform for the students to bridge the distance between theoretical and practical domains. In the constantly growing world of oil and gas, it is essential to engender a deep understanding of its dimensions and its applications.

VAKTAVYA 2.0

<https://www.upesaapg.org/guest-lectures> [5]

Session by Ms. Meenakshi Agarwal

Deputy General Manager with India Oil Corporation

“Every addition to trust knowledge is an addition to human power.” Honest Mann

Potential is a capacity for development and learning, not a destination. UPES AAPG Student Chapter is ecstatic to bring to you a guest lecture under the banner of "Vaktavya" on the topic "Fluctuations in the Price of Oil and Gas" on July 5th.

We are honoured to have Ms. Meenakshi Agarwal as our featured speaker for the workshop. She is a Deputy General Manager with India Oil Corporation and has more than 15 years of experience in the oil and gas industry. She currently administers risk management and is well-versed in the oil sector. She also possesses excellent analytical skills for oil trades.



The poster is for a session titled "Vaktavya 2.0" presented by the UPES AAPG Student Chapter. It features a circular portrait of Ms. Meenakshi Agarwal, Deputy General Manager at India Oil Corporation. The topic is "Price Fluctuation in Oil market" on July 20th, 2022, from 5:00 PM to 6:00 PM via Google Meet. Contact information for Ashwan Kumar (+91 8292902435) and the website www.upesaapg.org are provided.

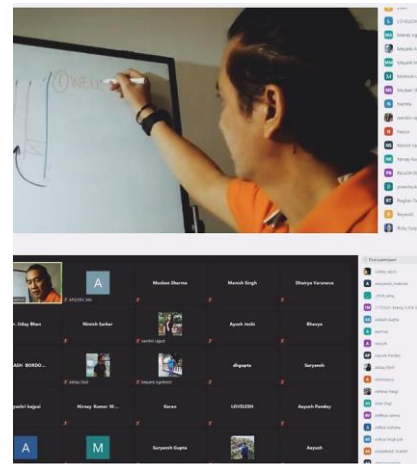
VAKTAVYA 3.0

<https://www.upesaapg.org/guest-lectures> [5]

Session by Mr. Areiyando Makmun

Instructor for Schlumberger Next Training and IATMI

To provide a deep insight into the hydraulic fracturing in oilfields, We, UPES AAPG Student Chapter, organized this webinar featuring Mr. Areiyando Makmun, Instructor for Schlumberger Next Training and IATMI, as our featured guest speaker, under the banner of Vaktavya 3.0. The session educated our engineers in the making with knowledge and insights on fundamentals of hydraulic fracturing and emphasize the importance of hydraulic fracturing, its need, its pros and cons, and how it could be used as an effective tool to come with better production of crude oil. The insightful session was attended by national and international participants as well as distinguished faculty members.



Session by Dr. Prajesh Das

Deputy Chief Engineer Operations, LPG Department at Oil India Limited

Corrosion is a factor that affects the Oil & Energy sector periodically. Some estimate the global annual cost of corrosion to the oil and gas industry as exceeding \$60 billion. Besides, corrosion commonly causes serious environmental problems, such as spills and releases. Under the banner of Vaktavya 3.0, We, UPES AAPG Student Chapter, organized this session featuring Mr. Prajesh Das, Deputy Chief Engineer Operations, LPG Department at Oil India Limited, as our

featured guest speaker. This session was an essential resource that provided budding engineers and designers with the tools and methods to design corrosion-management programs for oil and gas infrastructures mainly focused on the Cathodic Protection system.

Other Guest Lectures

<https://www.upesaapg.org/guest-lectures> [5]

Session by Shri Shekhar Srivastava
CGM Geology Head, KDMIPE, ONGC Dehradun

In hydrocarbon exploration, it is important that geological characters of the area have been analysed and recorded in detail so that search for hydrocarbon deposits is successful.

We, UPES AAPG Student Chapter, organized a guest lecture by Shri Shekhar Srivastava, under the banner of Crust'20 on the same topic. The session was very informative and was a major highlight in the fest.



Session by Dr. Ponmani Swaminathan
Assistant Professor, AMET University

To address recent developments in the ever-evolving field of drilling fluid technology, we, UPES AAPG Student Chapter, organized a guest lecture under the banner of Crust'20 which featured Dr. Ponmani Swaminathan, our guest speaker. The insightful session was attended by both national and international participants.



Terminologies in CP system: for familiarization

- Coating/Wrapping of Underground Pipe For C.P. System.
- Condition Monitoring of Coating/Wrapping of Underground Pipeline By latest Technique for the **Holiday Detection Method**.
- Detection of A.C & D.C Interference in the R.O.W. of Pipeline.
- Pearson Survey, Coating Conductance, CPL, Interference & its Mitigation, Soil Resistivity, Chemical Analysis, Bacterial Loading Evaluation for C.P. System, Soil Strata Classification etc.

A general overview
on
Cathodic Protection System
- an anti-corrosion technique
(Key focus: LPG Mounded storage Bullets)

By: **Projesh Das**
Dr. Chief Engineer
Oil India Limited

Corrosion Reactions:

$Fe \rightarrow Fe^{2+} + 2e^-$ Reaction at Anode
 $2H^+ + 2e^- \rightarrow H_2$ Reaction at Cathode
 $O_2 + 2e^- + 2H^+ \rightarrow 2OH^-$
 $Fe(OH)_2 \rightarrow Fe(OH)_3$ (green colour)
 $4Fe(OH)_2 + 3O_2 + 6H_2O \rightarrow 4Fe(OH)_3$
 $Fe(OH)_3 \rightarrow Fe_2O_3 \cdot 3H_2O$ (Rust, Brown colour)

Pic courtesy: Cath



Session by Dr. Anjan Ray
Director, CSIR Indian Institute of Petroleum and Chairman, PCD1

UPES AAPG Student Chapter, in association with the UPES Research and Development Department, conducted a guest lecture on 'Future of Petroleum' featuring our guest of honor, Dr. Anjan Ray. With a special focus on energy sustainability, the event was an exceptional learning experience. We were proud to be joined by our honorable chancellor Dr. S. J. Chopra, HOD, Dr. Sunil Khare, and Dr. Uday Bhan.

Session by Dr. Harilal

Executive Director (Head of Institute) KDMIPE

To address recent developments in the ever-evolving field of drilling fluid technology, we, UPES AAPG Student Chapter, organized a guest lecture under the banner of Crust'20 which featured Dr. Ponmani Swaminathan, our guest speaker. The insightful session was attended by both national and international participants.



Session by Dr. Suresh Chandra

Chief Communication Officer Petronet LNG, Group GM, ONGC

Searching and learning is where the miracle of success begins." Moving forwards on our mission to bring insights from the industry to the students we, UPES AAPG Student Chapter, on the occasion of Crust'19 conducted the prestigious guest lecture program by Dr. Suresh Chandra Sharma, Chief Communication Officer Petronet LNG, Group GM, ONGC.

He enlightened us with his words as he spoke on LNG Infrastructure in India. As he continued imparting knowledge to our students, the students eagerly participated.

Vaktavya

Mr. Manish Verma (Senior Technical Professional, Halliburton Services Offshore)

Mr. Arun Kumar (Data Architect, British Petroleum)

To enlighten the freshmen about the opportunities and versatility of the industry we, UPES AAPG Student Chapter, conducted Vaktavya, the Guest Lecture Series on the 16th and 17th of August, where the finest from the industry joined us to help the newcomers with the in and out of the industry. The series consisted of two workshops. One by Late Mr. Arun Kumar, on Industry opportunities and roles around digital data, while the other by Mr. Manish Verma, who Inc. helped students with a lecture on:

A poster for the Vaktavya series of guest lectures. It features the UPES and AAPG logos at the top. The title 'वक्तव्या' is written in large Devanagari script. Below it, it says 'A SERIES OF GUEST LECTURES'. Two speakers are featured: Arun Kumar on the left and Mr. Manish Verma on the right. Arun Kumar's lecture is titled 'Industry Opportunity & roles around digital data' and is scheduled for August 17, 2018. Mr. Manish Verma's lecture is titled 'Start off on the right foot' and is scheduled for August 16, 2018. The venue is Vivekanand Auditorium, starting at 12:30 PM onwards. The slogan 'OPEN FOR ALL' is at the bottom.

"Starting off on the right foot". The series was a new venture and helped us get together with the students starting this session.

[How students benefit from conducting research at university](https://blog.upes.ac.in/7-ways-how-students-benefit-from-conducting-research-at-university/)

<https://blog.upes.ac.in/7-ways-how-students-benefit-from-conducting-research-at-university/> [6]

UPES EDITORIAL TEAM · MAY 24, 2022

Engaging in research while studying at university significantly impacts students' growth and development. From developing a problem-solving mindset to getting more career opportunities, students benefit from research in several ways

The mission of an extraordinary institution is multifaceted, of which teaching and learning, and research and discovery, are the most critical components. Universities conduct research as part of discovering new knowledge; any intellectual development is impossible without research. Here are seven reasons how students can benefit from researching while studying at a university.

A resource for effective learning

There is always something new to learn, even if you are an expert in your field. The main reason for undertaking research is to gain new information. Research will help you in developing a unique perspective on a topic. The whole process offers a chance for learning and growth. According to studies, research can help with memory restoration and maintenance as well as numeracy and problem-solving ability. As a result, it aids in a better understanding of concepts and theories. Conducting research can also help you develop an improved and higher capacity to learn.

Opens career opportunities

In the practical world, the value of research cannot be emphasised enough. Successful institutions spend a lot of money and resources on research and development to ensure they have all the necessary data. Your academic research experience will benefit you in planning future research endeavours.

Assists in problem solving by providing valid evidence

Research raises concerns that have not been addressed previously. It allows people to talk about and respond to issues and topics that have been left unaddressed. The research approach can debunk assumptions that individuals may have. They may occur because of a common misconception or the erroneous use of a resource. Conducting research will help you find rational and fact-based knowledge.

Allows for a mental workout

Allowing your mind to absorb facts and exercise logic regularly can help it to stay stimulated. It encourages the brain's natural curiosity, driving it to explore new possibilities. Reading and writing are the two most important aspects of research; working with statistics and figures become second nature. Reading helps you to broaden your horizons of knowledge and developing writing skills helps you to express yourself clearly.

Keeps you informed about current events

Discoveries are continuously being made in various fields, particularly those related to science. Researching will prevent you from falling behind or having erroneous information on a subject. You can use the most up-to-date information to elaborate on thoughts or confidently explain a topic.

Increases credibility and presents innovative concepts

People are more likely to trust someone's views if he or she is informed about the matter. Participating in research can help you build a strong basis to create an opinion. It is possible that you already have thoughts and viewpoints on the subject under consideration. More perspectives develop as more research is conducted. It encourages you to look into diverse points of view and assess your opinion.

Research improves comprehension and decision-making

Research is the most important instrument for comprehending the nuances of an issue and disproving falsehoods. It helps in upholding truth and building on to generate credible information. Conducting research helps you gain better knowledge and improve your decision-making skills. Researchers examine the specifics of a topic and assist in making educated conclusions. Therefore, we can say that research helps people make better decisions and address challenges.

In today's globalised world, research plays a critical role in an academic institution's development; knowledge-driven growth based on innovation is essential. The fundamental premise of research is the pursuit of knowledge. Students, society and nations all gain from high-quality research.

PEOPLE DEVELOPMENT PROGRAM

<https://upes-production-cvb3e7frghdda0a4.z01.azurefd.net/drupal-data/2023-09/annual-report-2020-21.pdf> [7]



UDAAN: A Leadership building program for 30 Academic Heads of Departments from 6 schools with an aim to build their leadership capability, thereby helping them to become more effective people managers, was launched. This is a 1-year long journey having 4 powerful modules on Managing Self, Managing Teams, Managing Organizations and Leading Change. Each module is designed in a way that there are lots of interactive sessions, simulations and role plays with an immersive experience. Each module is further designed with a slot of 3 days, thereby ensuring an investment of 12-man days of leadership development at HOD level.

BLACKBOARD

<https://upes-production-cvb3e7frghdda0a4.z01.azurefd.net/drupal-data/2023-09/annual-report-2020-21.pdf> [7]

A state-of-the-art mobile enabled digital learning and collaborative platform ('Blackboard') has been implemented. 'Blackboard' as Learning Management System tool is used in some courses for Hybrid – Blended teaching and learning. The features are mentioned below

- Blackboard Collaborate is majorly used for synchronous sessions. Lectures are being recorded for students to review and listen to lectures offline. In some courses, content is being used for asynchronous sessions. Reporting features are also available only for individual courses
- Management – Course Reports, Performance Dashboard, Retention Center
- Information – Email, Calendar, Announcements, Tasks, My Grades, User Directory

- Content – Course Structure, Lesson Content, Weblinks, Links to media, Multimedia content is developed by UPES faculty members on LMS - Blackboard
- Collaboration – Discussion Boards, Blogs, Wikis, Journals
- Assessment is used for conducting Class Tests, Online Tests, Assignments, Rubrics, Grade Center Supplementary Examinations, Mid-term Examinations and End Semester Examinations for non-graduating batches
- Kaltura – Video Recordings
- Respondus – Online Proctoring for Assessments Blackboard was relied upon heavily to conduct online classes in response to the pandemic and continues to be a mission critical technical platform for UPES. UPES is seen as a leader and exemplar in the Blackboard community in India, which contributes to the brand and reputation of the university. UPES has been recognized with 3 Catalyst Awards in the year 2021.
- One for 'Leading Change', this award honours institutions who are at the forefront of educational innovation.
- One for 'Optimizing Student Experiences', this award honours institutions whose educational and administrative innovations have markedly improved the total learner experience.
- One for 'Teaching and Learning', this award recognizes those who have adopted flexible distance and online delivery, including using mobile technologies to positively impact the educational experience.

RESEARCH AND DEVELOPMENT

<https://upes-production-cvb3e7frghdda0a4.z01.azurefd.net/drupal-data/2023-09/annual-report-2020-21.pdf> [7]

A University's worth, its 'greatness', should be judged by its value to the society. Since its establishment, UPES has been among India's pioneering innovation driven University with fine tradition of developing research culture in the organization by creating dedicated research centers and winning several research projects from National and International Funding Organizations; both in the public and private sectors. UPES has a strong ecosystem to support innovations and research. To foster a research culture that provides solutions through innovative applied research to society and intellectually stimulating environment for research faculty; UPES has developed a commensurate research policy:

- Expansion of research databases through subscription of SCOPUS, Science Direct, Web of Science, Emerald Insight, EBSCO, IEEE etc.
- Provision of SEED grant for undertaking interdisciplinary and innovative research projects.
- Student support for research through a scheme 'RISE' (Research and Innovation for Science and Engineering) & SHODH to test the feasibility of their innovations.
- Talks, lectures from eminent researchers, conference, seminars etc.
- Establishment of Centre for Interdisciplinary Research and Innovation (CIDRI), Machine Intelligence Research Centre (MIRC), Centre for Alternative Energy Research (CAER) and Speech and Language Research Centre (SLRC).

- Financial support for attending national and international conferences etc.
- Rewards & Recognition Policy & Research Advisory Committee

RESEARCH CENTERS

• Centre for Interdisciplinary Research and Innovation (CIDRI)

Centre of Inter-disciplinary Research & Innovation (CIDRI) at UPES provides a platform for interaction across the boundaries of various disciplines – such as Science, Engineering, Health Environment, Computer Science, Design, Management, Humanities, Law, etc. – and address the key technical, organizational and logistical challenges that currently hinder truly transdisciplinary research. CIDRI promotes and facilitates the interfacing and collaborating with industries, clinicians and doctors in hospitals for translational research, research groups of prominent national and international universities/institutes. CIDRI aims at bringing together the researchers in the field of basic sciences, all streams of engineering, artificial intelligence, machine learning alongwith experts of design as well as business and law so as to finally emerge with a product with intellectual property rights and business plan.

• Central Instrumentation Centre (CIC)

Central Instrumentation Center (CIC) was inaugurated by “Padma Bhushan Dr. R. Chidambaram” on th 27 February 2014. This facility is aimed to provide data collection from sophisticated, analytical equipments to scientific community for their advanced research and also to facilitate cutting edge technologies for societal needs.

The facility is open to researchers from across the country. List of Equipment at CIC

- FTIR
- GC-MS
- HPLC
- ICP-OES
- CHNS/O Analyzer
- XRD
- UV-Vis Spectrophotometer
- DC/RF Sputtering System
- Photoluminescence Spectrophotometer
- Rheometer
- Muffle Furnace
- Chemical Vapor Deposition
- Contact Angle Goniometer/Drop Shape Analyzer
- Atomic Force Microscope
- Particle Size Analyzer

- Thermo Mechanical Analyzer
- pH/ISE Meter
- pH/ORP, DO, CD/TDS Meter
- Tubular Furnace
- pH Meter
- Weighing Balance
- 3 D Printer
- Source Meter
- Spin Coater
- Thermal Evaporation System
- Colony Counter
- Borosil Double Distillation Unit
- Centrifuge
- Dielectric Constant of Liquids
- Digital Ultrasonic Cleaner-Ultrasonic Bath
- Electronic Weighing Balance
- Medical Refrigerator Freezer
- Millipore Water Purifier
- Nano Fluid Interferometer
- Optical Microscope
- Oven
- Electrochemical Potentiostat-Galvanostat
- Probe Sonicator
- UV Cabinet
- Nano Micro Bubble Generator
- Ozone Gas Generator
- Water Bath
- Orbital Shaking Incubator
- Laminar Air Flow
- Autoclave
- **Machine Intelligence Research Centre (MIRC)**

The facility is aimed at conducting high-end computing specific to investing Machine Learning challenges of Artificial Intelligence. The facility is funded by Research & Development of UPES, in collaboration with School of Computer Science (SOCS) having a vision to develop as Centre of Excellence (COE) that is profound and self-sustainable.

MIRC facility is equipped with HPE Apollo 6000 Gen 10 server system, having 256 GBs of RAM and dual Xeon processors installed over 32 GB of GPU Tesla V100 graphic card. MIRC provides platform for researchers among all faculty and students to conduct fundamental research in the field of Artificial Intelligence and Data Sciences. It also provides assistance and collaborates with other schools of the university and other related organizations for applied AI work. MIRC facilitates the heavy and parallel computing for other fields like fluid dynamics, virtual reality, and simulation for aerodynamics. The centre is utilized by students of doctoral studies, post and under graduate along with faculty members. Over the coming few years, the centre is expected to be strengthened with increased computational capacities and other infrastructure.

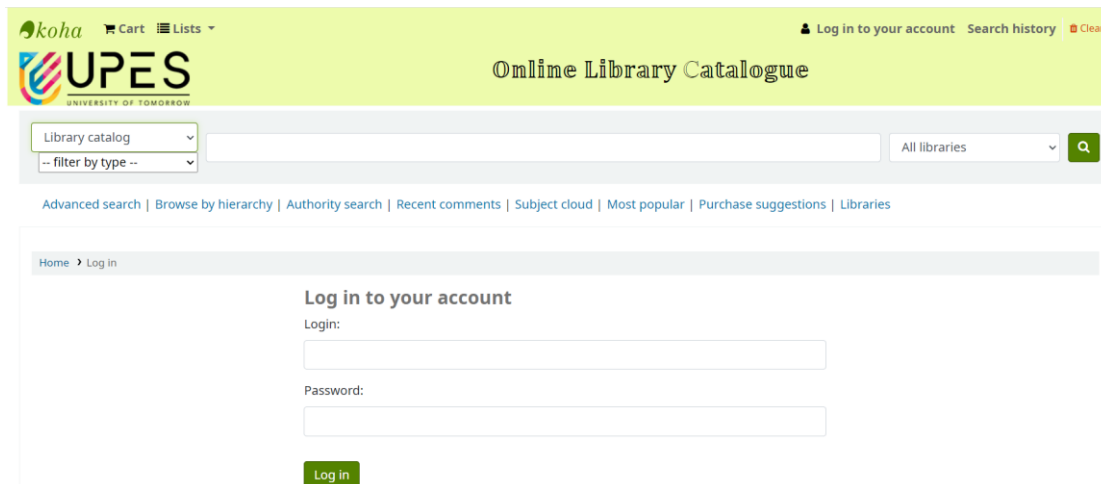
- Centre of Alternative Energy Research (CAER) Providing safe, widespread, and equitable access to sustainable energy is one of the key challenges of our time. Centre for Alternate Energy Research (CAER) UPES, hosts world-leading researchers who see this challenge as an opportunity to help future generations inherit a better world. Our interdisciplinary program brings together innovators from many departments, including the School of Applied Science, School of Engineering, School of Health Sciences and School of Business. Work is in progress on different alternative energy resources using advanced technology. Current efforts include biofuel production from waste agricultural and forest biomass by thermal and biological routes, plastic waste to energy and other value-added products, microalgae biofuels. CAER actively seek national and global collaboration with industry, academia and all levels of government and private bodies. List of equipment at CAER • Solar Thermal Pyrolysis Reactor (15 Kg/Batch)

- Digital Pyrolysis Reactor (100 G/Batch)
- Digital Pyrolysis Reactor (50 Kg/Batch)
- Municipal Solid Waste Segregator
- Plastic Shredder Machine 3
- Floating Type Biogas Production Plant (6 M / Day) 3
- Floating Type Biogas Production Plant With Biogas Engine Set Up (80 M /Day) 3
- CSTR Biogas Plant (40 M /Day)
- Gasification Reactor (Downdraft Gasifier, 20 Kg/Batch)
- Briquetting Machine
- Screw Press Expeller
- Lab Scale Biodiesel Reactor (1L/Batch)
- Biodiesel Reactor (5L/Batch)
- Biodiesel Production Plant (100L/Batch)
- Fermenter

- Algae Photo Bioreactor
- Open Raceway Ponds
- Soxhlet Extraction Unit
- Hydrothermal Liquefaction Reactor
- Viscometer
- Density Meter
- Pour And Cloud Point Apparatus
- Bomb Calorimeter
- Gas Chromatograph With TCD And FID
- Hot Air Oven

[Open Online Library Catalogue](https://ils.ddn.upes.ac.in:8001/cgi-bin/koha/opac-user.pl)

<https://ils.ddn.upes.ac.in:8001/cgi-bin/koha/opac-user.pl> [8]



The screenshot shows the login page of the UPES Online Library Catalogue. The header features the Koha logo, a shopping cart icon, and a 'Lists' dropdown menu. On the right, there are links for 'Log in to your account', 'Search history', and a 'Clear' button. The main header area displays the UPES logo (University of Tomorrow) and the title 'Online Library Catalogue'. Below the header is a search bar with a dropdown menu set to 'Library catalog', a search input field, and a dropdown menu set to 'All libraries'. A search button is located to the right of the search input. Below the search bar is a navigation menu with links: 'Advanced search', 'Browse by hierarchy', 'Authority search', 'Recent comments', 'Subject cloud', 'Most popular', 'Purchase suggestions', and 'Libraries'. The main content area has a breadcrumb trail 'Home > Log in' and a 'Log in to your account' section. This section contains two input fields: 'Login:' and 'Password:', followed by a green 'Log in' button.