Session on "Design Thinking, Critical Thinking and Innovation Design"
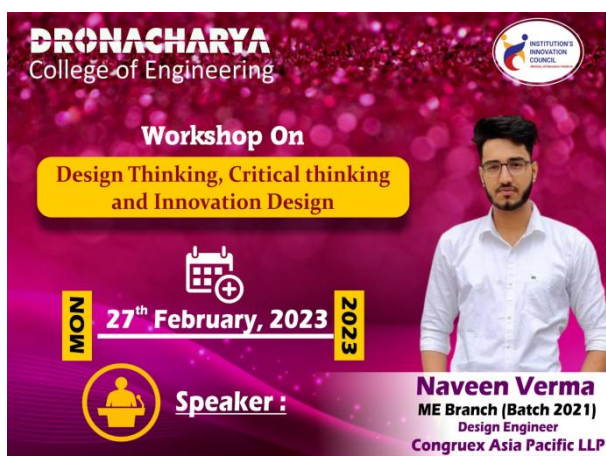
27th February 2023

Institution's Innovation Council, Ministry of Education (MoE), Dronacharya College of Engineering, Gurugram conducted a session on **"Design Thinking, Critical Thinking and Innovation Design"** on **27th February, 2023**. Third Year B.Tech students attended the program. **Mr. Naveen Verma** (Batch 2021, ME Department), Design Engineer. Congruex Asia Pacific, LLP was the resource person of the interactive session.

Ms. Renu Dua (T&P Head) welcomed **Mr. Naveen** and presented a bouquet to him. She gave a brief introduction of the guest and asked him to take charge of the dais and share his experiences.

Mr. Naveen started the session and told about his campus days, number of projects he undertook during his B.Tech journey and the importance of gaining practical knowledge. Further, he shared his journey at Congruex Asia Pacific. Then, **Mr. Naveen** highlighted the fact to carry innovation, critical thinking is a vital parameter. Assumptions must be made and there should be no lacking in the efforts to make the assumptions a reality. To make an idea a successful reality, proper application of the thoughts is also necessary.

The session also covered how Design Thinking and Critical Thinking abilities are used to produce what customers really want. Towards the last, a detailed question-answer session took place and students cleared many misconception. The program gave an opportunity to the students to learn from alumnus rich experience and also gained insights of industry.

Lastly, **Prof. Neha Chauhan** (HOD, ME Department) gave vote of thanks to Mr. Naveen for sharing valuable information with the students.

Workshop on Data Analytics and AI Applications in Research

17th February, 2023

Dronacharya College of Engineering, Gurugram, successfully organized a **Workshop** on **Data Analytics and AI Applications in Research** to equip teaching staff with essential analytical skills and knowledge of artificial intelligence in academic and industrial research. The session was attended by **45 faculty members** who gained valuable insights into the latest advancements in data-driven decision-making and AI techniques.

The workshop provided a comprehensive overview of data analytics methodologies and their significance in solving real-world research problems. The session began with an introduction to fundamental concepts of data analytics, including data collection, preprocessing, visualization, and statistical analysis. The speaker emphasized the role of AI in enhancing research outcomes, covering machine learning algorithms, predictive modeling, and deep learning applications**.**

A key highlight of the workshop was the hands-on session, where participants explored various AI-driven analytical tools and frameworks. The participants engaged in practical demonstrations using Python, R, and AI-powered data analysis techniques, gaining a better understanding of how AI can optimize research processes.

Throughout the session, the speaker encouraged interactive discussions and addressed attendees' queries on AI's role in data interpretation, automation, and predictive analytics. The session concluded with a Q&A segment, where participants discussed the application of AI in different research domains, including healthcare, finance, and engineering.

The workshop received positive feedback from participants, who appreciated the practical approach and industry relevance of the topics covered. The event reinforced the significance of data analytics and AI in modern research, empowering participants with the necessary skills to enhance their academic and professional pursuits.

Industrial visit to 'Yakult Danone Private Limited'

5th September 2022

Institution's Innovation Council (IIC), Ministry of Education (MoE) Dronacharya College of Engineering, Gurugram organized an industrial visit to "**Yakult Danone Private Limited**" on **5th September 2022.** 58 students (EEE/ECE/ME/R& A/and CSE students) along with 3 faculty members **Dr. R. Dheivanai** (Associate Professor, EEE Department), **Dr. Ashok Kumar** (Associate Professor, APS Department) and **Dr. J. R. Ansari** (Associate Professor, APS Department) visit the company.

The objective of the visit was to acquaint the students with the various operations undertaken at the plant.

As a pioneer in pro biotic, Yakult has formidable research capabilities and product technologies in the field of pro biotic. Yakult Central Institute for Microbiological Research has for years researched the use of intestinal bacteria as a factor in health maintenance, conducting a wide range of studies on the benefits of microorganisms in Japan. In India too, Yakult Danone (joint venture of France and Japan) India is working actively to build awareness about pro biotic and contribute to a healthier society. Yakult's benefits have been scientifically established through years of research and 30 million people in 32 countries drink Yakult every day.

The Yakult team welcomed DCE students and faculty members. **Ms. Devanshi,** Junior Executive, PRO gave a brief introduction about the company and then students and faculty members visited their product display area, which had product display and its availability at various countries.

Dronacharyans then moved to the manufacturing and processing units where they were given a brief idea about the sections and the processes that are carried out in the factory at different stages such as seed room, preparation of probiotics, quality checking, R & D section. All the processing units were fully automated. There were 2 bottle preparation machines namely 'Injection Blowing Machine' which prepares almost 11,000 bottles / hour / machine. The capacity of each bottle was 65 ml and each bottle drink contains 6.5 billion of beneficial bacteria that provides immunity to our bodies. Dronacharyans minutely observed all the automatic process involved at Yakult like preparation of bottles, filling with probiotic drinks, sealing and their labelling. Yakult manufacture 2 variants namely Yakult Light (reduced sugar and calories with Vitamin D & E) and Yakult (high sugar with skimmed milk, glucose etc). Hygiene was properly maintained and at every stage, quality, pH value, quantity of bacteria, acidity, etc was checked.

Later everyone proceeded to the seminar hall. A brief presentation about Yakult was given and then pros and cons were discussed. In the Q & A Session, many questions of students were answered by Yakult team members. The business process was also explained. Yakult appoints Yakult Ladies who promotes women empowerment schemes. In the end of session, **Dr. J. R. Ansari** gave his feedback and thanks Yakult Officials for the visit on behalf of **Dronacharya College of Engineering, Gurugram.**

Students had a good exposure about the automation protocol adopted by Yakult for their products. It was a very good experience for all.

Visit to CSIR - NPL

20th April 2023

Dronacharya College of Engineering, Gurugram organized a **visit to CSIR-National Physical Laboratory (NPL)** on **20th April, 2023** as part of the One Week One Lab programme. **35 students** along with **Dr. J. R. Ansari** had the opportunity to visit NPL.

CSIR - NPL is National Metrology Institute of India and is one of the leading science and research laboratories of the country. It is the apex institute which disseminates traceable measurements for various SI units such as length, mass, time, voltage, current, etc. across the country and also to SAARC nations. The objective of the visit was to infuse the technological and scientific work carried at NPL.

Students learned about the most recent ideas and achievements of CSIR- NPL in diverse sectors of wisdom and technology. They were also inspired by the tales and perspectives of the women scientists who were engaged in their STEM challenges and opportunities. Afterwards, students also got the opportunity to see some of the technology and services that CSIR- NPL provides for various industries and societal issues.

It was an extremely informative and enriching tour that helped the students understand CSIR- NPL's role in fostering scientific and technical growth. Everybody had an interaction with Sr. Scientist **Dr. Ritu Srivastava** at Research and Development Conclave at CSIR NPL.

It was an incredible opportunity to attend the R&D Conclave & Women in STEM event for the students of DCE.

TECH SURAKSHA - An Internal Hackathon

11th April 2023

CSI and ISTE Student Chapter along with Institution's Innovation Council (IIC), Ministry of Education (MoE), Dronacharya College of Engineering, Gurugram organized **"Tech Suraksha - KAVACH – An Internal Hackathon"** on **11th April, 2023**. The **KAVACH-2023** is co-organized by AICTE, the Bureau of Police Research and Development (BPR&D, MHA), and the Indian Cyber Crime Coordination Centre. (I4C, MHA). **44 teams** participated in the event.

It was a nationwide initiative to provide students with a platform to solve some of the pressing problems everyone face in daily lives, and thus inculcate a culture of product innovation and a mind-set of problem-solving.

The hackathon had 20 problem statements related to the cyber security domain against which the innovative minds were required to submit their ideas and compete against each other. The internal hackathon was held in a competitive environment, with each team working on creative solutions. The teams were required to present their ideas and solutions to a jury panel in two rounds. During their assessment, the judges placed a strong emphasis on security aspects incorporated in the solutions. The following were the details of the jury panels:

- Mr. Sushil Sharma, Senior Software Engineer, Optum
- Dr. Ritu Pahwa (HOD AIML)
- Prof. Yashwardhan Soni (HOD CSE 2nd Year)
- Dr. Manoj (Assistant Professor, CSE Dept.)
- Dr. Shipra Arora, (Associate Professor, CSE – AI & ML)
- Prof. Naveen (Assistant Professor, CSE Dept.)
- Prof. Ashish (Assistant Professor, CSE – AI & ML)

The students showed enthusiasm and designed creative solutions for various problem statements of KAVACH - 2023. The competition sought creative ideas and technological solutions to address cyber security and cybercrime challenges confronting law enforcement agencies and ordinary citizens. The suggested solutions' innovation and creativity, objectives of the work, feasibility and relevance for real-world issues, presentation skills, and commercial viability were among the judging factors.

All the 10 chosen teams' work demonstrated technical proficiency and creative abilities with cutting-edge technologies such as Artificial Intelligence/Machine Learning, Deep Learning, Data Analytics, etc. to find reliable, secure, and efficient technological solutions for cyber security issues faced in the 21st century.

Through KAVACH, it was an exceptional chance for higher education students and start-ups to contribute their creative concepts and ideas to address the challenges of cyber security.

Engineer's Day Celebration

12th – 15th September 2022

On the occasion of Birth Anniversary of India's most prominent engineer Dr. Mokshagundam Vishweshvaraya we celebrate Engineers Day in the remembrance of their remarkable works in engineering field. Our institute celebrates this occasion every year with full of enthusiasm. In Engineer's Day celebration, poster competition, idea contest, ppt presentation and design of robot was organised for the students across all the department with the aim of involving the academic community in the conference to expedite learning, and to provide a platform to demonstrate their innovative research skills. This event was organised by the Dr. R. Dheivanai (Associate Professor, EEE Department). The program was attended by many students form first year to final year and the enthusiasm of Students was overwhelming. The session was well appreciated by the students and they also demanded for more such sessions.

Celebration of Innovation Day

14th – 15th October 2022

Dronacharya College of Engineering, Gurugram organized an "Orientation Program" for the 1st year B.Tech students (Batch-2022-2026) from **10th – 14th October, 2022** on the eve of National Innovation Day. The faculty coordinators of the program were Prof. Shivani Gupta (APS Department) and Prof. Anchal Bhutani (APS Department). They gave detailed information about the college, vision, mission, the affiliating university, authorized center of excellence, library, management and faculty. The distinguished chief guests of the event were Dr. Bibek Bandyopadhyay (Distinguished Professor, JIS Institute of Advanced Studies and Research, Kolkata, Senior Adviser, Ernst & Young LLP, New Delhi, Senior Adviser, International Institute for Energy Conservation New Delhi) and Dr. Rajeev Kumar Mehajan (Scientist 'G' & Advisor – Earth & Atmospheric Sciences, Mathematical Sciences & Life Sciences). Prof. Shivani Gupta gave a brief introduction of the guests. Dr. Rajeev Kumar Mehajan commenced the session by showing a short video on evolution of life. He related his video with modern day engineering technologies and insisted, engineering is creativity, logic, skills and innovation. Dr. Mehajan made the session very light and highly interactive by focusing on key aspects of the challenges that one face while transitioning from school life to college life and further in jobs and family. He shared his life experiences and the lessons that he learnt from the challenges he faced and overcame with flying colors. Further, he elaborated the following topics: • The Challenges for Engineering students • Basic life skills • Success and failure The session was deeply interactive and the students were very enthusiastic and actively participated in the discussions. Speaker: - Dr. Bibek Bandyopadhyay & Dr. Rajeev Kumar Mehajan Date: - 15 th October 2022 Time: - 10:45 AM – 3:45 PM Venue: - Auditorium Next, Dr. Bibek Bandyopadhyay enlightened students on the importance of engineers in the society. He emphasized that Engineers are the ones who make things happen. Using innovation, creativity and a wealth of knowledge, engineering graduates are impacting the world unlike any other. He said, Engineers must have critical thinking, yet creative, curious, capable as well as ready to handle the constantly changing world. The basic job of engineering has always been about solving complex issues and making our lives simple, safe, happy and productive. If we look back over the years, we can see how engineering has solved complex problems. Be it health sector, transportation, manufacturing, or automobile engineering has always played a pivotal role. He ended his talk with the discussion on the realization of the responsibility that these students carry the responsibility on their shoulders to bring a change in society by addressing and solving real life issues and bringing an innovative solution through their projects.

Workshop on My Story – Motivational Session by Successful Innovators

12th October 2022

Alumni Shubham Rauthan (Adani Digital Labs), Shivani Rao(Indigo Airlines), Vipin Chander(AdaniDigital Labs), Bhashkar Bhawani Nandan (Research & Development Engineer, Keysight Technologies) and Yognath R (5G Product Design and Development VVDN Technologies) enlightened students on various topics. Before campus visit, session on "The Guide to your Dreams" covering topics: Compose Camp, Kortlin and demo of already build projects took place, thereby selecting and providing the selected students with learning and networking opportunities to enhance their learning. This talk with industrial expert helped students a lot. It gives them an exposure to working of industry with all the present requirements and requires innovations. Speakers spoke about the skills required by a successful social enterprise owner and the desire to improve their world, to be productive, to have the ability to spot new trends, and to deal with failure. They also talked about their revolutionary innovations in the field of agriculture. Along with the simple innovations which social entrepreneurs can do with the help of inventions of their time was also shared with students as these can have more impact on the society and its issues too. They further encouraged the students to follow their passion according to their skills.

Problem Solving and Ideation Workshop
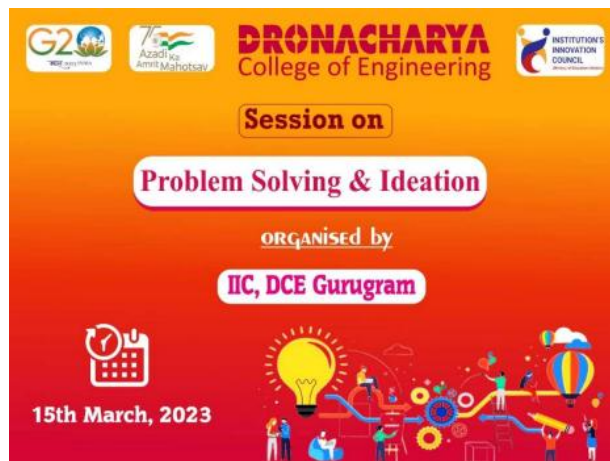
15th March 2023

An ideation session is created for a structured process in which a mentor can guide participants through exercises to come up with ideas for the situation they want to solve or the product they want to develop. This workshop is a hands-on, activity-based session built around the Design Thinking process.

The session mainly focused on: • Innovation methodology, framework & building on skills and tools. • Brain storming and ideation sessions. • Identifying Problems having business potential. • How to conceive the idea, what are the best practices and how to build a good team? At the outset the students were welcomed, made aware about the objective of the workshop and the initiatives of Innovation Cell (Ministry of Education, GoI). The important aspects covered by the speaker during the workshop were

1. The concept of Entrepreneurship

2. Importance of innovation and idea generation

3. Importance of problem solving

4. The skills, characteristics, attributes and functions of Entrepreneurs

5. The importance of creative thinking and strategic thinking

About 170 students attended the workshop. The queries of the students were very well handled by the speaker. The overall feedback of the workshop was very positive.

Poster Presentation of Innovations – YUKTI –NIR

13ᵗʰ January 2023

The Ministry of Education (MoE) Government of India has taken an initiative to create a National Innovation Repository (NIR) – YUKTI. It is being implemented by MoE's Innovation Cell and AICTE to build a repository of Ideas, Innovations and Startups developed from Academic Institutions and Enabling Institutions to manage and nurture these innovations by offering continuous support in terms of one-to-one mentorship, grant assistance, referral and linkage with Incubation Units, connecting with Angel/Venture Capital (VC) Investors Network, Knowledge Agencies, etc. Furthermore, the repository creation and maintenance in each HEI will also provide opportunities for innovations to take part in various National Level Innovation and Startup Challenges/Programs through a nomination process. The submitted Ideas, Proof of Concept, Prototype, Innovations, BusinessModel, Startups will be verified and if found suitable, they will be recommended to the MOE's Innovation Cell for further consideration by the institute. WHO CAN REGISTER ON YUKTI ? Faculty, staff and students including the Alumni are invited to submit their Ideas, Proof of Concept, Prototype, Innovations, Business-Model, Startups on the YUKTI Portal at the link https://yukti.mic.gov.in/login/SUMyMDE4MTAyODA. The basic eligibility for submission of application is that applicant should have/had association with the Institute as • current student, • alumni, • faculty, • staff

Applicants must upload the copy of document/ID proof of association with the DCE while registration at the portal. The registration is open now. Specific Guidelines are available on the YUKTI portal for reference. WHY SHOULD YOU REGISTER ON YUKTI ? It is a very good opportunity to showcase your Ideas, Proof of Concept, Prototype, Innovations, Business-Model, Startups at the national level and also there is a possibility of being selected and supported by the MOE and other organizations. So don't miss the opportunity to upload your Idea/Innovation/ Business Model/Startup on the MOE's Portal. A total of 106 ideas were registered in this idea challenge, out of which 38 ideas were finalized.

National Science Day (PPT Competition – "Impact of Scientific Innovation in Human Life"

28th February 2023

Institution's Innovation Council (IIC), Ministry of Education (MoE), Dronacharya College of Engineering, Gurugram celebrated **"National Science Day"** on **27th – 28th February, 2023**. The celebration was held in line with India's G20 presidency. 105 students participated in the celebration activities. The celebration was held in order to commemorate the invention of the Raman Effect in India by the Indian physicist, Sir Chandrasekhara Venkata Raman on the same day in the year 1928. The theme was "Global Science for Global Well-Being". The ultimate aim of celebrating the day was to provide awareness of science among the engineering students. Prof. Pooja Sharma was the program coordinator. The events were judged by Dr. Dimple Saproo and Dr. Ashima Mehta. Various events were held across two-day celebration which included Debate competition, Poster Presentation, PPT Presentation and Project Presentation. The guidelines for participating in the competition were pre articulated to all. 27th February 2023 Debate Competition and Poster Presentation Competition were conducted on first day of the competition. Students actively participated in the Debate Competition. The theme for the competition was 'The Science of Today is Technology of Tomorrow.'

Students expressed their views on the stated topic and focused upon the need of Innovation through their potential words. The second competition of the day was Poster Presentation Competition on the theme 'Innovation in Science.' Students expressed their outlooks by way of beautiful posters. Students were guided by their respective mentors and their efforts were applauded by the judges of the event. 28th February 2023 PPT Competition and Project Presentation Competition were conducted on second day of the competition. The theme of the PPT competition was 'Impact of Scientific Innovation in Human Life.' Students made thought breaking slides. The designs and the content were very well placed in each slide. The next competition of the day was Project Presentation Competition. Students presented their Real Time Innovative Projects in front of the judges and gave a briefing of their projects along with the demonstration. Students actively participated in the competitions and also learned a lot by way of participation. All the participants' efforts were appreciated and were awarded with Certificate of A chievement.

Expert Talk on "Process of Innovation Development, Technology Readiness Level (TRL)

21st February 2023

Institution's Innovation Council (IIC), Ministry of Education (MoE), Dronacharya College of Engineering, Gurugram organized a Expert talk on **"Process of Innovation Development, Technology Readiness Level (TRL)"** on **21st February, 2023**. Mr. Vijay Arora was the eminent speaker of the session. 286 students attended the session. The main objective of this Talk was to create awareness among the students and faculty of Engineering and Science courses about the many innovative ways of technology readiness level. The session covered the following topics:

• Process and Implications in Innovation Development

• Understanding Technology Readiness Level (TRL)

• Manufacturing Readiness Level (MRL) • Investment Readiness Level (IRL)

• Understanding the Metric assessment of Innovation Development stages Afterwards a question-answer session was also taken up and students cleared many doubts.

Lastly, Vote of Thanks was given by Dr. Ashima Mehta. Overall, the session was very useful and students got the opportunity to learn a lot.

Seminar on International Women Day (Theme DigitAll: Innovation and Technology for Gender Equality)

3rd March 2023

Institution's Innovation Council (IIC), Ministry of Education (MoE) and NSS Units Dronacharya College of Engineering, Gurugram celebrated **"Women's Day"** from **1st – 8th March, 2023**. The female faculty members, staff members and girl students of the college attended the programme. The theme of women's day was DigitAll: Innovation and technology for gender equality. The theme was aligned with the priority theme for the upcoming 67th session of the Commission of the status of women (CSW67).

There were three chief guests for the event: 1. Yogita Shukla who is an interdisciplinary professional with the core passion towards scientific research, technology promotion and sustainable living that is very important to build harmony between natural ecosystems for sustainable and healthy living. 2. Mukta Girdhar has more than 24 years of imparting education in the field of Disaster Management and GIS. She motivated women to be empowered and excel in multidisciplinary fields. 3. Meera Iyer, Founder & Director, Inspired Living and Senior Psychologist. She is also a Child and Adolescent Psychologist with Ph.D. in Cyber psychology. She spoke to women on weaving relationships: Love, Compassion and Assertiveness. During the entire week celebration, students and faculty members participated in various activities and games.

Many technical sessions were also taken by the Chief Guests. Staff members also voluntarily spoke upon many arousing topics related to Women. Work-life balance was one of the important topics on which everyone shared their views. It was an endeavour to acknowledge a woman's struggles and obstacles on their way to a better life and women security. Lastly, Program Coordinator Dr. Ashima Mehta thanked the Chief Guests.

Creating YUKTI Innovation Repository and Participation in Innovation Challenge

1ˢᵗ October 2022

The Ministry of Education (MoE) Government of India has taken an initiative to create a National Innovation Repository (NIR) – YUKTI. It is being implemented by MoE's Innovation Cell and AICTE to build a repository of Ideas, Innovations and Startups developed from Academic Institutions and Enabling Institutions to manage and nurture these innovations by offering continuous support in terms of one-to-one mentorship, grant assistance, referral and linkage with Incubation Units, connecting with Angel/Venture Capital (VC), Investors Network, Knowledge Agencies, etc. Furthermore, the repository creation and maintenance in each HEI will also provide opportunities for innovations to take part in various National Level Innovation and Startup Challenges/Programs through a nomination process. The submitted Ideas, Proof of Concept, Prototype, Innovations, Business-Model, Startups will be verified and if found suitable, they will be recommended to the MOE's Innovation Cell for further consideration by the institute. WHO CAN REGISTER ON YUKTI? Faculty, staff and students including the Alumni are invited to submit their Ideas, Proof of Concept, Prototype, Innovations, Business-Model, Startups on the YUKTI Portal at the link https://yukti.mic.gov.in/login/SUMyMDE4MTAyODA. The basic eligibility for submission of application is that applicant should have/had association with the Institute as • current student, • alumni, • faculty, • staff

Demo Day of Start-Ups

22ⁿᵈ – 24ᵗʰ August 2022

The objective of the event was to enhance student's knowledge and talent, research orientation and unstopped potential and prepare future generation of engineers to be innovative leaders, responsible citizens and problem solvers. Around 20 teams have registered for the event. Participants brought their software and hardware projects in competition. The teams competed against each other for best project award. They were assessed by an assessment panel of professors who appreciated them and gave them suggestions to further improvement of their projects. The participants were motivated by the guidance of Mr. Anurag Upadhayay and Dr. Anil Kumar Goswami. Prof. (Dr.) B.M.K. Prasad (Principal, DCE Gurgaon) also inspired participants with his worthy words & Guest of Honor also encouraged participants and focused on Design thinking.

The winners of the event were as follow: Team: Trios (Team Leader: Shivam (CSE), Team Members: Sunit (CSE), Chirag (CSE) bagged the First Prize. Team members were awarded with a cash prize of 5000/- with certificate.

Team: The Way Makers (Team Leader: Siddharth Sharma (CSE), Team Members: Aryan Rakheja (AI&ML), Aditya (ECE)) was the 1st runners up. Team members were awarded a cash prize of 3000/- with certificate Team: CREW-Z (Team Leader: Tania (CSE), Team Member Utkarsh (CSE)) were the 2nd runners up. Team members were awarded a cash prize of 2000/- with certificate.

Participation certificates were distributed to all the participants. Project Competition was an opportunity and platform for students to showcase their hard work and talent in form of project they had made. Overall, the event was wonderful and lot of creative and innovation is learned.