

SDG 09

INDUSTRY, INNOVATION
AND INFRASTRUCTURE



LIST OF ACTIVITIES

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2	Awareness Walk on Green Infrastructure
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13	Clean room guidelines for Air Conditioning System
14	Revit Workshop
15	HPLC Workshop
16	30th Pakistan HVACR International Expo & Conference 2025

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ACTIVITY 01: AWARENESS DESK ON GREEN INFRASTRUCTURE

Organized By:
The Department of Civil Engineering



ACE organized an Awareness Desk focused on green infrastructure, highlighting its essential role in developing sustainable urban environments. The event also linked to SDG 9, which emphasizes building resilient infrastructure and fostering innovation. By educating students about integrating green infrastructure such as green roofs, urban forests, and permeable pavements, ACE highlighted the importance of nature-based solutions in enhancing urban resilience and addressing climate change. This initiative aligns with SDG 9.1, which focuses on developing quality, reliable, sustainable, and resilient infrastructure. This initiative encouraged students to consider their roles in creating sustainable infrastructure that benefits both communities and the environment.



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ACTIVITY 02: AWARENESS WALK ON GREEN INFRASTRUCTURE

Organized By:
The Department of Civil Engineering



ASCE, in collaboration with DSE, organized an Awareness Walk to promote green infrastructure and nature-based solutions. This initiative aligned with SDG 9, emphasizing resilient infrastructure and innovation. By educating students about green infrastructure like green roofs, urban forests, and permeable pavements, ASCE highlighted the importance of nature-based solutions for enhancing urban resilience and addressing climate change. It also focusing on developing quality, reliable, sustainable, resilient infrastructure, and equipping learners with knowledge for promoting sustainability. Overall, this initiative engaged students with the critical components of SDG 9, encouraging them to consider their roles in creating sustainable infrastructure that benefits both communities and the environment.



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ACTIVITY 03:

SITE VISITATION AT MAIN ADVALA ROAD

Organized By:
The Department of Civil Engineering



ACE organized a construction site visit for Batch 233 and 243, an initiative that directly aligns with SDG 9: Industry, Innovation. This site visit provided students with hands-on exposure to real-world construction practices, fostering practical solutions to address infrastructure challenges and contribute to achieving these critical SDGs. The initiative specifically connects to Target 9.1 of SDG 9, which aims to develop quality, reliable, sustainable, and resilient infrastructure to support economic development and human well-being, which aims to reduce the adverse per capita environmental impact of cities, including by paying special attention to air and water quality, municipal and other waste management, and human settlements. By encouraging students to observe and learn about modern construction techniques, safety protocols, and sustainable practices, the visit promotes the development of infrastructure that is both innovative and environmentally responsible, contributing to the creation of sustainable and resilient cities.



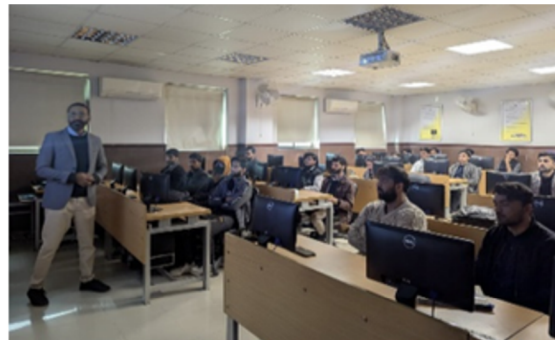
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ACTIVITY 04:

INFRASTRUCTURE DESIGN USING BUILDING INFORMATION MODELING

Organized By:
The Department of Civil Engineering



ASCE organized a training session on “Infrastructure Design using Building Information Modeling (BIM)”, an initiative that aligns with Sustainable Development Goal (SDG) 9: Industry, Innovation, and Infrastructure. This training equipped participants with advanced BIM skills, enabling them to design innovative, efficient, and sustainable infrastructure systems. By integrating digital tools and sustainable practices, the initiative fosters solutions to global infrastructure challenges, contributing to both SDGs. The training connects to Target 9.1 of SDG 9, which focuses on quality, reliable, and resilient infrastructure. By encouraging BIM for resource optimization, waste reduction, and enhanced collaboration, the training promotes infrastructure that is environmentally sustainable, economically viable, and supportive of resilient urban development.



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ACTIVITY 05:

SEMINAR ON THE ENERGY CONSERVATION BUILDING CODE (ECBC-2023)

Organized By:
The Department of Mechanical Engineering



The event brought together students, faculty, and industry experts to discuss the importance of energy efficiency and sustainable building practices. Our esteemed guest speaker, Dr. Zeeshan Ullah, Director Buildings, NEECA, Ministry of Energy Pakistan, provided valuable insights into the ECBC-2023. The interactive seminar highlighted the code's key provisions and its potential to reduce energy consumption and promote sustainable development. This partnership between CUST and NEECA is poised to drive sustainable development and innovation in Pakistan's energy sector, paving the way for a greener and more energy-efficient future. By fostering collaboration between academia, industry, and policymakers, this effort contributes to sustainable infrastructure development, supporting SDG 9 (Industry, Innovation, and Infrastructure), specifically Targets 9.1, 9.4, and 9.c.



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ACTIVITY 06:

INTELLECTUAL PROPERTY AND ACADEMIA-INDUSTRY COLLABORATION

Organized By:
The Department of Mechanical Engineering



An FDP Session was scheduled by the Department of ME on the topic "Intellectual Property and Academia-Industry Collaboration: A Perspective" on Tuesday, 24th December 2024, from 2:20 pm to 3:20 pm in the Mechanical Engineering workshop. The guest speaker was Dr. Saheeb Ahmed Kayani, CEng MIET, SFHEA, Assistant Professor, Department of Mechanical Engineering, College of Electrical and Mechanical Engineering, National University of Sciences and Technology. More than 17 people attended the session, including all the faculty of the ME department. This event aligned with SDG 9 (Industry, Innovation, and Infrastructure), specifically Target 9.2, which promotes inclusive and sustainable industrialization, and Target 9.5, which encourages innovation and research in technology.



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ACTIVITY 07: INDUSTRIAL OUTREACH MEETING

Organized By:
The Department of Mechanical Engineering



An Industrial Outreach meeting was held on November 13, 2024, between representatives from ITEL Energy Division of Transsion Holdings China and the Mechanical Engineering Department of Capital University of Science and Technology (CUST). The meeting aimed to explore potential areas of cooperation and collaboration between the two organizations. During the meeting, discussions focused on potential collaborations, including student internships, joint research projects, and technical seminars. ITEL Energy Division extended an invitation to CUST students and faculty to participate in upcoming technical seminars and lab visits. ITEL Energy will arrange a seminar on solar energy after the mid-term exams at CUST, where ITEL Energy Division will also demonstrate their different equipment for the students. This meeting aligned with SDG 9 (Industry, Innovation, and Infrastructure), specifically Target 9.2, which promotes inclusive and sustainable industrialization, Target 9.b, which supports domestic technology development and innovation, and Target 9.c, which aims to enhance access to information and communications technology.



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ACTIVITY 08:

COLLABORATION WITH THE PAKISTAN HVACR SOCIETY

Organized By:
The Department of Mechanical Engineering



Building bridges between education and industry! Capital University of Science and Technology (CUST) is proud to announce a new partnership with the Pakistan HVACR Society, the sole representative body for Heating, Ventilation, Air-conditioning & Refrigeration (HVACR) in Pakistan. We've officially signed a Memorandum of Understanding (MoU) to drive collaboration in training, research, and professional development. This event aligned with SDG 9 (Industry, Innovation, and Infrastructure), specifically Target 9.2, which promotes inclusive and sustainable industrialization, Target 9.5, which encourages innovation and research in technology, Target 9.a, which supports the development of sustainable infrastructure in developing countries, and Target 9.b, which fosters technological development and innovation.



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ACTIVITY 09:

COLLABORATION WITH NATIONAL ENERGY EFFICIENCY AND CONSERVATION AUTHORITY

Organized By:
The Department of Mechanical Engineering



The Industrial Outreach Committee (IoC) of the Mechanical Engineering Department has made significant strides in fostering collaborations with key stakeholders to promote energy efficiency and sustainable practices. The MoU signing ceremony was graced by the presence of key figures from both institutions, including Dr. Sardar Mohazzam, Managing Director of NEECA, and Prof. Dr. Imtiaz Ahmed Taj, Dean of the Faculty of Engineering at CUST, who served as the primary signatories. The partnership aims to leverage the expertise of both organizations, with a focus on capacity-building initiatives, joint research projects, and the development of programs to promote energy-efficient technologies. This collaboration is expected to empower students and faculty members, contributing significantly to national and global energy conservation efforts. This drive aligned with SDG 9 Target 9.5, 9.a and 9.b.



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ACTIVITY 10: SMOG AWARENESS

Organized By:
The Department of Mechanical Engineering



The Smog Awareness was a successful community event aimed at raising awareness about the detrimental effects of smog on health and the environment. Participants from various backgrounds, students, came together to demonstrate their commitment to fighting air pollution. The event highlighted the importance of reducing emissions, adopting sustainable practices, and working collectively towards a cleaner and healthier future. Overall, the event fostered a sense of community and underscored the urgent need for action against smog. The Smog Awareness event aligns closely with Sustainable Development Goal (SDG) 9: Industry, Innovation, and Infrastructure, particularly in its focus on promoting sustainable practices and reducing emissions. The event emphasized the adoption of sustainable practices to combat air pollution, which is directly tied to SDG 9 target 9.4 of upgrading infrastructure and industries to make them sustainable and environmentally friendly. By raising awareness about reducing emissions, the event encouraged individuals and communities to support cleaner technologies and practices.



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ACTIVITY 11: ROBO-CUST 2025

Organized By:
The Department of Electrical Engineering



The Department of Electrical and Computer Engineering, in collaboration with the Directorate of Sustainability and Environment (DSE), organized the ROBO CUST competition to support SDG 9, specifically targeting 9.5 to enhance scientific research and technological capabilities. The event featured multiple robotics-based competitions, including Robo Race (LFR), Maze Solving, Sumo War, RC Race, and Aero Wars, allowing school, college, and university students to test their automation, programming, and problem-solving skills. Participants eagerly designed and programmed their robots, showcasing their technical abilities in a series of exciting challenges. ROBO CUST successfully encouraged students to explore engineering and technology, reinforcing the importance of STEM education and innovation for sustainable industrial development.





ACTIVITY 12:

SDG'S EXPO 2025: INDUSTRY, INNOVATION, & INFRASTRUCTURE

Organized By:
The Department of Mechanical Engineering



The SDG Expo 2025 is a major event focusing on sustainable development goals (SDGs) organized by DSE. It brings together student ambassadors to address urgent environmental and social challenges. The expo features seventeen themed exhibition areas, including sustainable architecture, finance, living, tourism, education, healthcare, solutions, international partnerships, talents, and ecosystems. Participants collaborate to foster social and environmental sustainability, showcasing innovative solutions and fostering deep collaboration between the public sector, businesses, and academia. Students from the Mechanical Engineering department actively participated in the event, presenting projects aligned with SDG 9: Industry, Innovation, and Infrastructure especially target 9.c to increase access to information. Their contributions highlighted advancements in sustainable manufacturing and energy-efficient technologies, emphasizing the role of engineering in building resilient infrastructure and promoting inclusive industrialization.



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ACTIVITY 13:

CLEAN ROOM GUIDELINES FOR AIR CONDITIONING SYSTEM

Organized By:
The Department of Mechanical Engineering



The lecture on Clean Room Guidelines for Air Conditioning Systems provided essential insights into the design and operation of HVAC systems for controlled environments such as pharmaceutical labs, semiconductor facilities, and biotech production units. Topics included ISO-based clean room classifications, HEPA/ULPA filtration, pressure differentials, temperature and humidity control, and energy-efficient airflow design. The session emphasized the importance of maintaining air purity, minimizing contamination, and aligning with global standards to ensure product quality and process safety. This lecture directly supports (SDG 9): Industry, Innovation, and Infrastructure, by promoting sustainable and resilient industrial systems. It specifically targets Sub-SDG 9.1 (develop sustainable infrastructure), 9.4 (upgrade systems with clean and efficient technologies), and 9.5 (enhance industry-related research and innovation), empowering professionals to adopt advanced, sustainable HVAC practices in high-precision industries.



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ACTIVITY 14: REVIT WORKSHOP

Organized By:
The Department of Mechanical Engineering



The Revit software workshop provided hands-on training in Building Information Modeling (BIM), enabling participants to design efficient, sustainable infrastructure using Autodesk Revit. The workshop promoted digital innovation in the construction sector, equipping students and professionals with essential skills for modern, technology-driven design and planning. This initiative directly supports (SDG 9): Industry, Innovation, and Infrastructure, specifically targeting sub-goals 9.1 (develop sustainable and resilient infrastructure), 9.4 (upgrade infrastructure for sustainability through clean and efficient technologies), and 9.5 (enhance technological capabilities and innovation). By integrating digital tools like Revit, the workshop contributes to building resilient infrastructure and fostering innovation in the built environment. Fostering digital literacy and promoting innovative approaches to infrastructure development, the workshop plays a vital role in preparing the next generation of professionals to lead in building smarter, more sustainable cities and communities.



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ACTIVITY 15: HPLC WORKSHOP

Organized By:
The Department of Bioinformatics
and Biosciences



The Department of Sustainability and Environment (DSE), in collaboration with Genix, Department of Bioinformatics and Biosciences, Council of Scientific and Industrial Research, Ministry of Science and Technology, Head Office, Islamabad, successfully hosted a one-day training workshop on High Performance Liquid Chromatography (HPLC) on April 15, 2024. The workshop enhanced participants' technical knowledge and practical skills in chromatographic techniques, focusing on qualitative and quantitative analysis in research and industry. Through hands-on training and expert lectures, participants gained expertise in HPLC principles, equipment operation, troubleshooting, and data interpretation. By supporting SDG 9.5 (Enhance scientific research and upgrade technological capabilities), this capacity-building initiative empowered participants to confidently apply HPLC in laboratory settings, driving scientific research and innovation forward.



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ACTIVITY 16:

30TH PAKISTAN HVACR INTERNATIONAL EXPO & CONFERENCE 2025

Organized By:
The Department of Mechanical Engineering



Students from the Department of Mechanical Engineering Technology at Capital University of Science and Technology (CUST), under the supervision of Lecturer Engr. Muhammad Ahmed, actively participated in the 30th Pakistan Heating, Ventilation, Air Conditioning, and Refrigeration (HVACR) International Expo & Conference, held from June 19 to 21, 2025, at Expo Centre Lahore.

The three-day international event brought together over 250 exhibitors and thousands of professionals, featuring participation from more than 33 international companies, including first-time exhibitors from Germany, as well as key industry leaders from China, Turkey, Ukraine, and Iran. The Expo served as a vital platform for showcasing cutting-edge HVACR technologies, energy-efficient solutions, and modern MEP systems, reinforcing Pakistan's emerging role in the global HVACR industry.

