SUSTAINABLE DEVELOPMENT GOALS

Geomechanics conferences led by Dr. Humberto Pehovaz

In November 2023, the Mining Management Engineering program conducted a training series through virtual conferences on Geomechanics (support processes for mining operations). This series was led by Dr. Humberto Pehovaz, Technical Manager at Geohydraulics Perú SAC.

The aim of the conferences was to enhance knowledge in the support of underground excavations and skills and knowledge in solid waste management (SWM) in the mining industry.

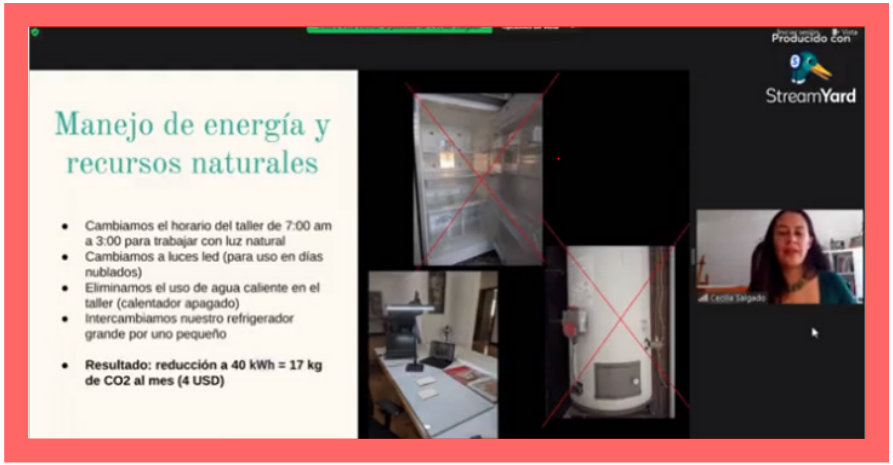
The activity was directed to external community members and the UPC community.

Photography month

In September 2023, during the celebration of photography month, the Communication and Photography Program offered a virtual talk to reflect on the impact of photography on climate change and the importance of good practices in the field of conservation. The speaker was Mexican photographer Cecilia Salgado.

The goal was to put basic concepts of the circular economy into practice. Topics included the proper use of water management and new policies adopted by museums worldwide in response to global warming. A manual on good practices for environmental sustainability in photography was shared.

The activity was directed to external community members and the UPC community. This activity allowed beneficiaries to learn about good photography practices that respect the environment.



Environmental Engineering students participated in the Project Fair at the Peruvian Engineers Association

On May 30 and 31, 2023, students from the Environmental Engineering program at UPC participated in the Project Fair organized by the Engineers Association as part of the celebrations for Environmental Engineering Week.

The posters presented by the students were “Environmental concern: microplastics in the Sand of Costa Azul Beach, Ventanilla, Lima” and “Effects of guinea pig manure on green area soils,” among others.

The purpose of the fair was to promote environmental scientific research among students of the program and to raise awareness among attendees with the generated information.

THE ENVIRONMENTAL FACTOR IN ESG (Environmental, Social, and Governance) CRITERIA

On March 1, 2023, as part of the awareness-raising actions requested by the American Chamber of Commerce of Peru (AmCham Peru), the conference "The Environmental Factor in ESG (Environmental, Social, and Governance) Criteria" was held by experts from UPC.

The purpose of the activity was to raise awareness among participants about the environmental factor in ESG criteria and to analyze best practices that positively impact the environment, contributing to the sustainability of the planet and businesses.

The attendees included leaders from the sustainability areas of companies from various economic sectors, as well as members of Sustainability teams (coordinators, analysts, assistants).

Success in tree planting campaigns carried out by UPC Student Volunteers

Between October and December 2023, in partnership with the Municipality of Lima and supported by SERPAR, UPC conducted tree planting campaigns involving students from all university programs.

The objective of the activity was to encourage voluntary student participation to contribute to the conservation and improvement of the natural environment and the well-being of the people in the Human Settlement Nuevo Milenio, located in Chorrillos; the Park of Sector 1 Group 9 in Villa El Salvador; and the Park Arica in San Juan de Miraflores.

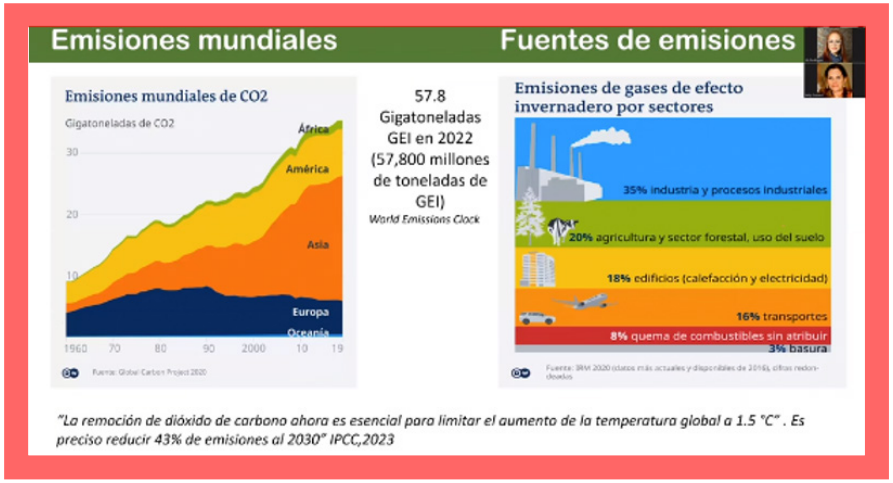
During the first day of tree planting, a total of 100 trees were planted. This number increased to a total of 150 trees thanks to the participation of the local community, which helped complete the activity using seedlings provided by the Municipality of Lima.

Climate Action in Peru: Progress and Challenges of SDG 13

The International Relations program, through the conference "Climate Action in Peru: Progress and Challenges of SDG 13," conducted a reflective analysis of various actions undertaken in Peru in relation to the environment and 2030 Agenda.

The goal of the activity was to contribute to the academic formation of International Relations students and others students through thematic conferences on globally relevant topics, delivered by highly qualified and internationally recognized specialists.

This effort aimed to raise awareness and concern for environmental, social responsibility, and sustainability issues.



Clothing Design Laboratory

In October 2023, the Fashion Design and Management program conducted the Clothing Design Laboratory activity to provide information on the proper use of textile materials, employing zero waste, upcycling, and subtraction techniques. The knowledge of using materials conscientiously with the environment was provided to avoid leaving waste that continues to pollute the environment.

Augmented reality for innovation: Education and analysis of the glacial retreat of the Peruvian Andean snow-capped mountains

Authors: Zapata-Paulini, J.; Cabanillas-Carbonell, M.; Iparraguirre-Villanueva, O.; Sierra-Liñan, F.; Baltozar-Clemente, S.; Alvarez-Risco, A.; Yáñez, J.A.

Abstract: Mountain glaciers are considered great reservoirs of water, and their importance lies in the fact that many of our ecosystems and numerous communities depend on them; Peru has one of the largest extensions of Andean snow-capped mountains, which have been affected by the decline in their glacier coverage and that is warned, will disappear due to environmental conditions and alterations in the current global temperature. This problem has increased due to ignorance, misinformation, indifference, and lack of solidarity on the part of the population who favors this discouraging situation. Taking advantage of the current technological immersion, in which we live, the development of a mobile application was proposed as a pedagogical resource to raise awareness among educational institutions about the glacial retreat of the Peruvian Andean snow-capped mountains, showing the current situation of some of the snow-capped mountains of the Andes that have suffered a greater impact, implementing augmented reality technology to obtain an interactive link. To provide greater detail of the situation, previous studies were carried out on glacial retreats in two Peruvian snow-capped mountains over the last 40 years, where it was found that, of the snow-capped mountains considered, Chicon had a decrease of

Augmented reality for innovation: Education and analysis of the glacial retreat of the Peruvian Andean snow-capped mountains

32.5% of its glacier cover, and Pumahuanca had a decrease of 56.9%. Such results are exposed within the application to provide realistic data on the glacial conditions of both Peruvian snow-capped mountains, as well as the consequences and conservation techniques to mitigate and cope with deglaciation. Taking into consideration that environmental education from an early age turns out to be key to forming an informed and participatory society about climate change.

Keywords: Deglaciation, Climate change, Snow-capped, Environmental education, Augmented reality, Peru

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Impact on urban drainage taking into account the rainwater harvesting in a rural district

Authors: Leslie Mireya López Villar, Daniel Alberto Velasco Becerra, Sissi Santos Hurtado

Abstract: Climate change is a reality in which we are all immersed, this situation generated by environmental problems, affects the rainfall that occurs in different parts of the world. These, increase on a large scale that even cause material damage in addition to human losses. Given this context, this research focuses on the collection of rainwater as a strategic means that will favor a rural district which presents intense rainfall, in addition to being one of the most affected by rains within the regions of Peru, through Said collection proposal will reduce the drainage flow that causes disasters to the population. The methodology of this study is made up of three stages. We begin with the characterization of the study area. Then, stage two is developed, which consists of hydrological modeling. Finally, the third phase consists of determining the volumes of water captured due to the runoff of precipitation on the roofs of houses, green areas and pavements. Resulting in a 3.15% decrease in the drained volume, which corresponds to the collection of reservoirs with a capacity of 400 liters/day in each house. Likewise, when the study area increases its socioeconomic level, reservoirs with a capacity of 875 liters/day can be integrated in each house, thus having a 6.89% reduction in the volume drained.

Keywords: Precipitation, Rain, Estimate, ArcGis, Collection, Urban drainage.

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https://dx.doi.org/10.18687/LACCEI2023.1.1.1376

Feasibility of Implementing Tidal Energy on Offshore Oil and Gas Platforms in the Foz do Amazonas Basin

Authors: Ana Beatriz Gomes Rodrigues Negrão, Shelda Rebbeca Ferreira Corrêa, Wanessa K. Lima e Silva, Trejo P.C, Raúl Salinas-Silva, Stefanny Camacho-Galindo, Vando J. C. Gomes, Laura E. Guerrero-Martin, Pedro Paulo de Freitas, Daniel Felipe Restrepo-Linarez, Edinelson Saldanha Corrêa, Camilo Andrés Guerrero-Martin

Abstract: This article consists of evaluating the feasibility of implementing tidal power plants to supply the electrical system of offshore oil plants at the Amazon mouth, so that they no longer require the burning of gases obtained in oil extraction, increasing the space in the platforms, by extinguishing the generators driven by gas turbines; thus, reducing the environmental impacts caused by the burning of fossil fuels. For this analysis, the System Advisor Model software platform was used to model the energy profile of the plant within the Tidal sublayer, and to establish the parameters: resources, converted energy, the predicted distance between the plant and the oil platform; in addition to losses during and after the implementation process, and the Oceanographic Modeling and Observation Network to obtain data on the speed of currents in the block shown on the exploratory block map of the National Agency of Petroleum, Natural Gas and Biofuels. Because of this analysis, the implementation of a tidal power plant in the offered block FZA-M-759 is feasible because it comfortably supplies an offshore platform in that location and implements an important energy transition by avoiding the burning of fossil fuels by applying clean energy, tidal energy.

Keywords: Ocean Energy, Electricity Generation, Equatorial Margin

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Sustainable development and protection against climate change in the economies of the Asia Pacific Economic Cooperation Forum (APEC)

Authors: Alejandro Antonio Quintanilla León,, Katherine Elizabeth Barona Ortiz, Virginia Vanessa Borja Salazar, , Evelin Diana Meza Morales, Gerson Daniel Ramírez Mogollón, Alvaro Mariano Mejia Mendivil and Delia Mercedes Cerna Huarachi.

Abstract: This paper aims to identify the main research trends on sustainable development and the fight against climate change in the APEC economies during the period 2014 to 2021, as well as possible future research. The methodology used was a literature review. After the review, the main results show that the relationship between the APEC forum and the environment has been taken from the perspective of reducing the impact of pollution in the environment, from strategic plans used to combat climate change, action proposals for the improvement of sustainability and the economy, and public opinion on the performance of governments on proposed measures. The future research identified is linked to deepening available knowledge of the variables and the recognition of different perspectives.

Keywords: Sustainable development; climate change, APEC, environment.

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