



Summer School
PUCP

Cusco & Lima, Peru
July 2025

*Water Resource
Management and
Renewable Energies*



Carlos A.



Summer School

PUCP

PUCP Summer School is a 2 week immersive academic and cultural program designed for international students. We offer an intensive learning opportunity in fields like culture, social entrepreneurship, and natural resources.

Dates: from July 14th to the 27th

Place: Lima and Cusco, Peru



Machu Picchu, Cusco, Peru

Includes

- **Accommodation and Lunches**
- **Academic lecture:** 40 hours
- **Extra activities**
 - Welcome and Orientation
 - Tour PUCP
 - Workshop: The Peruvian Common Sense
 - Peruvian Cooking Class
 - Meeting with PUCP students
 - Lecture: Peruvian Social Reality
 - 2 academic visits
 - 2 cultural visits
 - Summer Farewell
 - **3 days - 2 nights in Cusco**

Costa Verde, Lima, Peru

Contact: fieldschool@pucp.pe
incoming.shortcourses@pucp.pe



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Water Resource Management and Renewable Energies

International program

This program addresses two of the most pressing global challenges: sustainable water resource management and the development of renewable energy systems. Students will explore how Peru's diverse geography and climate have shaped its water resource challenges and examine how renewable energy technologies can contribute to environmental sustainability. The program includes classroom-based learning, interactive workshops, and site visits to water treatment facilities, hydroelectric plants, and renewable energy initiatives. Students will gain both theoretical knowledge and practical tools for creating sustainable solutions to water and energy challenges.



Program courses:

Water and Wastewater Management

Renewable Energy

Coordinator

Ramzy Kahhat

Ramzy Kahhat is a Principal Professor at the Department of Engineering at Pontificia Universidad Católica del Perú. He also serves as Associate Editor of Resources, Conservation and Recycling. Ramzy obtained his PhD and MSE in Civil and Environmental Engineering at Arizona State University. He is a broadly trained civil and environmental engineer applying concepts and methods from Sustainable Engineering, Industrial Ecology, and Earth Systems Engineering and Management. His expertise in these areas have been used in several research studies, such as sustainable waste management, LCA of civil infrastructure, energy systems and agricultural products, MFA of electronic materials and construction materials, urban stocks, and characterization of debris generated by disasters.



Course 1: Water and Wastewater Management

This course explores water and wastewater management challenges and solutions with a focus on circular economy principles. Using Lima as a case study, participants will analyze the root causes of water scarcity, current mitigation strategies, and potential solutions, including wastewater reuse for potable and non-potable applications. Regarding water management, the course will also delve into sedimentation, granular filtration, and advanced membrane filtration technologies, offering both theoretical foundations and practical applications. Regarding wastewater management, there is a need to recover, recycle and transform waste into useful sources. Thus, the second half covers chemical and biological technologies that allow the recycling of metals, nutrients, gases, biosolids, and energy from wastewater with affordable prices and friendly environmental conditions.

Professor: *André Torre García*

He holds a degree in Civil Engineering from the Pontificia Universidad Católica del Perú (PUCP) and two master's degrees from the Polytechnic University of Valencia (UPV): one in Hydraulic and Environmental Engineering and another in Business, Product, and Service Management. He is currently a doctoral researcher at the Peruvian Life Cycle and Industrial Ecology Network (PELCAN) at PUCP, where his research focuses on the occurrence of microplastics in Lima's urban water system. With approximately seven years of experience in water and wastewater management, his work encompasses the analysis and optimization of treatment processes, the assessment of environmental impacts, and the development of strategies for sustainable water resource management.



Professor: J. Rafael Alcántara Avila

Ph.D. in Chemical Engineering from Kyoto University. He subsequently worked for ten years at Japanese universities as assistant and junior associate professor and researcher in the fields of process simulation, optimization, and control. He has published over 40 articles in the field of Process Systems Engineering. Additionally, he has been researching fine bubble technology for more than seven years. He is currently a Tenure Track professor at the Pontifical Catholic University of Peru in the Environmental and Sustainable Engineering major. His research focuses on process optimization and the development of new technologies for wastewater treatment, water conditioning for potable and non-potable use, resources recovery and pollutants removal from water.



Course 2: Renewable Energy

This is an introductory course for renewable energies focusing on wind energy and solar photovoltaic (PV). The solar PV sector is the largest and fastest-growing renewable energy industry, thus, in the first section of this course, the student will gain the knowledge and skills needed to understand the physics of solar cells, how they work, the analysis of the latest PV technologies. The section concludes with a comprehensive design of PV systems and the characterization of PV power plants. Moreover, the second section of this course introduces the student to wind energy, its origin and evolution through time, and the main principles of wind turbines and other components of a wind energy system. Finally, a prospective of wind technology in the roadmap to sustainability is also included.

Professor: *José Angulo*

I am a physicist from the Universidad Nacional Mayor de San Marcos (UNMSM), where I specialized in the structural and optical characterization of silver metallic thin films. Later, I obtained a Master's degree in Engineering and Materials Science from the Pontificia Universidad Católica del Perú (PUCP), focusing on the optical characterization of wide-bandgap semiconductor thin films. I completed a double Ph.D. in Physics at PUCP and Renewable Energy at the University of Jaén (Spain). Currently, I work as a lecturer and researcher at PUCP, participating in projects related to the energy and techno-economic assessment of emerging PV technologies across various climatic regions of Peru, within the MatER-PUCP research group.

Professor: *Franco Canziani*

Mechanical Engineer, PhD from the Polytechnic University of Catalonia, with extensive managerial experience in industrial companies. Specialist in the design, manufacture and assembly of technological solutions to provide basic services and productive capacity to populations in remote areas using Renewable Energies. Lecturer and researcher in Micro-electric grids, Renewable Energies, Electric Mobility and Composite Materials.



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Schedule

First week

	Monday 14th	Tuesday 15th	Wednesday 16th	Thursday 17th	Friday 18th
8 a.m.	Welcome & Orientation				
9 a.m.	Water and Wastewater	Water and Wastewater Management	Water and Wastewater Management	Water and Wastewater Management	Water and Wastewater Management
10 a.m.					
11 a.m.	Renewable Energy	Peruvian Cooking Classes	Renewable Energy	Renewable Energy	Renewable Energy
12 m.					
1 p.m.	Lunch		Lunch		
2 p.m.	PUCP Tour	Renewable Energy	Academic Visit 1	Meeting with PUCP Students	Cultural Visit 1: LUM Museum
3 p.m.					
4 p.m.	Workshop : The Peruvian Common Sense	Renewable Energy		Lecture: Peruvian Social Reality	
5 p.m.					
6 p.m.					
7 p.m.					

Second week

	Monday 21st	Tuesday 22nd	Wednesday 23rd	Thursday 24th	Friday 25th	Saturday 26th	Sunday 27th
8 a.m.							
9 a.m.	Water and Wastewater Management	Water and Wastewater Management	Water and Wastewater Management	Water and Wastewater Management	Arrival in Cusco	Visit to Machu Picchu, Aguas Calientes	Free Day in Cusco and Return to Lima
10 a.m.							
11 a.m.	Renewable Energy	Renewable Energy	Renewable Energy	Renewable Energy			
12 m.							
1 p.m.	Lunch						
2 p.m.	Cultural Visit 2: Casa O'Higgins Tour + Retablo Workshop	Water and Wastewater Management	Academic Visit 2	Summer School Closing Ceremony			
3 p.m.							
4 p.m.							
5 p.m.							



Save the dates!

- **February 24th:** Application starts
- **March 9th:** Early bird deadline
- **March 23rd:** Application deadline
- **July 14th to the 27th:** 2-week program

Fees

Dates	Total amount
PUCP partners (anytime)*	15% discount
Early bird (until March 9th)	10% discount
Standard price (March 23rd)	\$2,998 USD

*The 15% partner discount applies at any time. Discounts are not cumulative.

Sign [HERE!](#)

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