HELLENIC OPEN UNIVERSITY

Lifelong Learning Center

Programme Study Guide

«Summer School-Wastewater and Biosolids Management»

PATRAS, 2026

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A. General Information & Programme Description

Program Title: Summer School «Wastewater and Biosolids Management»

Total duration (in number of hours and number of weeks): 50 hours, 2 ½ weeks, 17 days

ECTS credits: 2

Implementation Method and monitoring procedures (one of the following options is indicated):

A. Distance learning

B. Blended learning **X**

In the case of option B, the number of hours of face-to-face and distance learning are indicated below

Participants have the option of full remote attendance (50 hours); alternatively, those who prefer on-site participation can attend in person at the HOU facilities (36 hours).

Theoretical Instruction

9 teaching days – Total: 36 hours

Presentation of the fundamental principles of liquid and solid waste treatment, including modern technologies and approaches to sustainable management.

Presentation of a scientific poster related to the thematic field of the Summer School.

Self-Assessment, Study and Preparation

3.5 teaching days – Total: 14 hours

Independent study, completion of assessment questions, review and processing of course notes, and participation in educational video sessions (Educational experience at a wastewater treatment facility and a laboratory exercise related to the characterization of liquid waste).

Organizing Committee:

- Ioannis Kalavrouziotis
- Petros Kokkinos
- Ekavi-Aikaterini Isari
- Eleni Grilla
- Amalia Seferiadi
- Paraskevi Chalatsi
- Erofili-Vagia Gkogkou
- Alkistis Kanteraki
- Myrto-Sofia Kolovou

Scientific Committee:

Ioannis Kalavrouziotis	Cristina Mejias	Jeff Camkin
Laila Mandi	Dimitrios Bikiaris	George Arampatzis
Fernado Nardi	Hrissi K. Karapanagioti	Spyros Pavlostathis

Deeksha Katyal	Mohammed Matouq	Jurgen Wiese
Zheng, Xiao Yun	George Kyzas	Konstantinos Moustakas
Ioannis Katsoyiannis	Petros Kokkinos	Grigorios Kyriakopoulos
Kanatas Panagiotis	Δανάη Βενιέρη	Jinsuo Lu
Tingting Gong	Teo Fang Yenn	Eleni Grilla
Lambropoulou Dimitroula	Damianos Kalpakidis	Wang Li
Ladomenou Kalliopi	Heidrun Steinmetz	Zhiqiang Zhang
Ioannis Konstantinou	Hasan Volcan Oral	Mark Sklivaniotis
Popi Karaolia	Syriopoulos George	Gkogkou Erofili
Constantinos Kittas	Ekavi-Aikaterini Isari	Chalatsi Paraskevi

Thematic Field
Science and Technology **X**

Curricular Units of the Programme:

1. Linking Climate Change Impacts and Wastewater Treatment Strategies
2. Sustainable Agricultural Practices through Wastewater Reuse and Treatment
3. Catalysis in Wastewater Treatment. Processes and Innovations
4. Adsorption Mechanisms and Adsorptive Materials in Wastewater Management
5. Microbiology, Public Health, and Wastewater Management
6. Circular Approaches in Wastewater Management
7. Energy Valorization of Sewage Sludge and Biosolids
8. International Workshop on Wastewater & Biosolids Management
9. Wastewater Treatment Plants: History, Innovation and Impact
10. Hands-on Wastewater Analysis: Laboratory and Video exercises

Dates of Conduct: 13-29 July 2026

Location(s) of the Programme conduct (only in case B of the previous question):
The project will be implemented in Patras, at the auditorium of the Hellenic Open University

Other Information about the Program: -

Hospitality – Access Methods: -

Purpose and expected learning outcomes of the programme:
The Summer School focus on the fields of wastewater management and treatment, catalysis, wastewater reuse in agriculture, environmental microbiology, public health, remediation through adsorptive materials, and innovative wastewater treatment technologies. An International workshop dedicated to e-poster presentations and laboratory sessions (hands-on) complete this educational experience.

Upon successful completion of the Summer School, participants will be able to:

1. Recognize and categorize various types of liquid and solid waste based on their origin, composition, and degree of hazard.
2. Describe the fundamental principles, methods, and technologies applied in waste management, treatment, and final disposal.
3. Appreciate the significance of proper and integrated waste management within the framework of sustainable development and the circular economy.
4. Evaluate results from environmental parameter measurements related to the quality of raw and treated effluents and waste.
5. Interpret results from laboratory analyses and environmental measurements, drawing conclusions about treatment effectiveness
6. Identify and assess environmental risks associated with waste management, proposing corrective and preventive measures.
7. Propose basic optimization solutions for management systems (e.g., anaerobic digestion, composting, wastewater treatment).
8. Link theoretical concepts with practical field applications through laboratory exercises.
9. Responsibly implement waste management practices, adhering to principles of prevention, recovery, reuse, and recycling.
10. Apply the basic principles of environmental legislation and safety regulations in managing liquid and solid waste.
11. Demonstrate adaptability in different professional or laboratory environments, utilizing acquired knowledge and skills.

Whom the project is aimed at:

- Students
- Master's Students
- PhD Candidates
- Early-Career Researchers
- Engineers & Environmental Scientists
- Wastewater & Biosolids Professionals
- Public Sector Representatives & Water Utility Personnel
- Consultants & Industry Practitioners
- Stakeholders in Water, Waste & Environmental Sectors

Credits: -

Details of the Scientific Director:

Full Name: Kalavrouziotis Ioannis

Position: Professor

Email of Scientific Director: ikalabro@eap.gr

School: Science and Technology (SST)

Full curriculum vitae of the Scientific Director (link of the CV):

https://www.ioanniskalavrouziotis.gr/elementor-10/

Short CV of the Scientific Director

Professor Dr. Ioannis K. Kalavrouziotis with PhD in Environmental Geochemistry from the Department of Geology, University of Patras, Greece (1999) is currently a Professor and Former President of the Hellenic Open University, Member of the University's Board of Directors (1 September 2016 to 18 October 2022) and Director of Education on Wastewater Management Master Programme. He is also Honorary Doctorate, Aristotle University of Greece, School of Spatial Planning and Development, Faculty of Engineering (7 March, 2024), Visiting Fellow in the University of Derby, UK (2015-2018), and Guest Professor of Hubei University, China (09 May, 2019-2022). He has been Dean of the School of Science and Technology, HOU (1 September 2026 to 19 October 2022). He taught at the Department of Environmental and Natural Resources Management, University of Western Greece (2000-2013). He has completed administrative responsibilities as: Agronomist of the Greek Ministry of Agriculture (1988-2000), Director of Western Greece Region Administration (1993), Member of the Administrative Board of the National Agricultural Research Foundation (2006-2009), President of the Sector for the Management of Messolonghi Lagoon (2006-2009). He is member of IWA and has been President of IWA Symposium on 'Water, Wastewater, and Environment: Traditions and Culture', 2014, Patras, Greece, and Chairman of IWA Specialist Group on Water and Wastewater in Ancient Civilizations. He has been also President of the Regional Council for Research and Innovation of the Western Greece Region (2020-2024). He has published 6 Books and chapters, 144 peer-reviewed full research papers in International Journals, 84 papers in International Conferences, 44 papers in National Conferences and more than 120 articles in journals and newspapers.

Instructors

Dr. Laila Mandi is a Professor of Water and Environmental Sciences at Cadi Ayyad University, where she has contributed more than three decades of academic, research, and leadership excellence. She holds both a PhD and a State Doctorate from the same institution, with research focused on sustainable water treatment and nature-based solutions. In 2005, she co-founded the first professional Bachelor's degree in urban sanitation management in partnership with Veolia Water and the University of Limoges, achieving a graduate employment rate above 90%, and further contributed to the development of professional Master's programmes in water and waste management. As Founder and Director of the National Centre for Studies and Research on Water and Energy (2007–2023), she led pioneering projects implementing nature-based wastewater treatment systems across rural areas and schools. She has supervised more than 40 PhD students, authored over 200 scientific papers, secured four patents, and founded two start-ups. She serves as an expert evaluator for international organizations and programs, including UNESCO, USAID, EU, Africa–EU initiatives, and other global research funding schemes. Recognized internationally, she is a Fellow of both the African Academy of Sciences (FAAS) and the French Academy of Water, and a laureate of the Islamic Development Bank Prize for Women's Contribution to Development (2015).

Dr. Fernado Nardi is Associate Professor of hydrology and director of the Water Resources Research and Documentation Center (WARREDOC) at University for Foreigners of Perugia (Italy). His scientific interests pertain to water resources management, water distribution systems, hydro-informatics, flood risk, remote sensing and GIS, sustainable urban planning. Dr. Nardi's research outcomes, featured in major international journals, focus on hydrologic-hydraulic modelling, hydrologic prediction in ungauged basins, geomorphic floodplain mapping, geospatial information systems and algorithms, Open/Big Data and Citizen Science. He has relevant international experience with coordinating and principal investigator roles of research programs, technology transfer, scientific communication and outreach initiatives funded by European programs (e.g. Climatic-KIC, Water JPI) and by United Nations agencies (e.g. UNESCO, FAO, UNEP, UNECE). Since 2017 Dr. Nardi is chair of the Citizens and Hydrology (CANDHY) working group by the International Association of Hydrological Sciences (IAHS). Since 2019 he is a courtesy affiliate professor at the Institute of Environment of Florida International University (FIU) and Sustainable Communities theme coordinator of the FIU UNESCO Chair on Sustainable Water Security.

Dr. Hasan Volkan Oral is a full-time researcher in the Department of Civil Engineering at the Faculty of Engineering, İstanbul Aydın University, Türkiye. After earning a Ph.D. from Boğaziçi University, he completed his postdoctoral studies at Ben Gurion University of the Negev, Israel, focusing on agricultural and environmental sciences. Currently, he is engaged in environmental sustainability, nature-based solutions (NbS), and circularity applications within the fields of environmental science and engineering. He represents Turkey as a member of the Management Committee and leads Working Groups in various COST actions related to sustainability, NbS, and circularity. Dr. Oral is also the principal investigator of a TÜBİTAK (The Scientific and Technological Research Council of Turkey) and COST-funded research project that addresses circular water management applicable to nature-based solutions in the K. Menderes River Basin in Western Turkey.

Xiao Yun Zheng is a distinguished Professor and the President of the Yunnan Academy of Social Sciences, renowned for his pioneering interdisciplinary research in water civilization, environmental anthropology, and sustainable development. With a career spanning several decades, Professor Zheng has become a leading global authority on the cultural and social dimensions of water resources, particularly within the Lancang-Mekong River basin. His work masterfully bridges the gap between historical environmental wisdom and contemporary ecological policy, offering vital insights into how human societies adapt to hydrological changes. As an active member of the International Water Resources Association (IWRA) and various international academic bodies, he has authored numerous influential publications that explore the intersection of ethnic cultures and environmental preservation. Beyond his research, Professor Zheng is a key figure in international water diplomacy, advocating for collaborative regional management and the protection of water-related cultural heritage. His contributions continue to shape global discourse on how traditional knowledge can inform modern solutions for a water-secure future.

Kanatas Panagiotis holds a Ph.D. in Agronomy and M.Sc. in Organic Farming from the Agricultural University of Athens. He was an Agronomist at the Agriculture Union of Mesollonghi-Nafpaktias with 5 years of experience in EU single farm payments including integrated administration and control system (IACS) and the land parcel identification system (LPIS). He was also an agronomist in two brunches of farm supplies and led the commercial department for a year in the same Agricultural Union. Author of more than 50 publications in international scientific journals and more than 10 presentations and abstracts in national and international conferences. He is a Certified Adult Trainer (2015). He has coordinated and participated in many research projects, and has also participated in the Short Program "Precision Agriculture Applications" of the Hellenic Open University (2019). He is currently Assistant Professor in Agronomy and Crop Science at the Crop Science Department of the School of Agricultural Sciences of the University of Patras.

Tingting Gong is currently a professor at Southeast University, China. Prof. Gong received her Ph.D. degree in Environmental Engineering from The Hong Kong University of Science and Technology in 2014. Her research interests are evaluation and guarantee of water quality safety; formation, toxicity and control of emerging disinfection byproducts (DBPs) in drinking water, swimming pool water and wastewater. She has published over 50 peer-reviewed journal papers and led 10 research projects. She is currently the member of Environmental Science & Technology (ES&T) Early Career Editorial Board.

Constantinos Kittas is an Emeritus Professor at the University of Thessaly, Greece, and a Full Member of the Hellenic Agricultural Academy. Born in Larisa in 1949, he possesses a diverse and extensive educational background, holding diplomas in Agricultural Engineering, Civil Engineering, and Mechanical Engineering. His advanced studies include a PhD (Diplôme de Docteur Ingénieur) and a Post-Graduate Diploma in Solar Energy from the University of Perpignan, as well as an MSc in Meteorology from the University of Athens and a Habilitation in Agrometeorology from the University of Patras. With over 45 years of experience in academic education, Professor Kittas has specialized in greenhouse engineering, agricultural constructions, and environmental control. Earlier in his career, he served as a Research Scientist for the Greek Ministry of Agriculture and as a Professor at the Technological Educational Institute of Messologi. His research expertise is widely recognized, focusing on greenhouse design, microclimate control, and the simulation of greenhouse ecosystems. Professor Kittas has demonstrated prolific research activity, having coordinated or participated in more than 80 European and National research projects. His scholarly output is equally impressive, with over 250 publications in peer-reviewed international journals and more than 350 papers in conference proceedings. According to Scopus, his work has garnered 5,845 citations, resulting in an h-index of 40.

Lambropoulou Dimitroula is a Professor in the School of Chemistry at the Aristotle University of Thessaloniki (AUTH). Her research specializes in Environmental Chemistry, with a particular focus on the development of advanced analytical methods for the detection of emerging pollutants, such as pharmaceuticals and personal care products (PPCPs), in environmental matrices. Her scientific work includes extensive research into water and wastewater treatment, the fate and transport of organic pollutants, and the application of heterogeneous photocatalysis for the degradation of hazardous compounds. Professor Lambropoulou has coordinated and participated in numerous national and international

research projects and has authored a significant number of high-impact publications in peer-reviewed journals. In addition to her research, she is actively involved in teaching environmental pollution control and quality assurance, while supervising several doctoral and master's theses in the field of chemical analysis and environmental protection.

Ladomenou Kalliopi is an Assistant Professor of Inorganic Chemistry in the Department of Chemistry at the Democritus University of Thrace (DUTH), where she leads research at the Hephaestus Laboratory. She holds a PhD from the University of Liverpool and has developed an extensive academic background centered on the synthesis and photophysical study of porphyrinic complexes. Her research activities are at the forefront of sustainable technology, focusing on the design of metalloporphyrin complexes for photocatalytic hydrogen production, CO2 reduction, and bio-inspired photosynthetic systems for dye-sensitized solar cells. With a prolific publication record of 57 papers in international peer-reviewed journals and one international patent, Dr. Ladomenou is a recognized expert in hybrid materials and nanotechnology. Her career is marked by participation in 16 major research projects and numerous distinctions from prestigious bodies like the RSC and IKY. Beyond her research, she is a dedicated educator, teaching core Inorganic and Bioinorganic Chemistry courses at both undergraduate and postgraduate levels. Her professional contributions also extend to the global scientific community, where she serves as a regular reviewer for top-tier publishers, including Elsevier and the Royal Society of Chemistry.

Dr. Ioannis Konstantinou is currently Professor in Pollution Control and Environmental Protection Technologies, Department of Chemistry, University of Ioannina (DC-UOI). His studies and background includes: a) Diploma in Chemistry, University of Ioannina, Department of Chemistry (1995); b) Ph.D. in Chemistry (Excellent), Environmental and Chemical Technology, Department of Chemistry, University of Ioannina. His scientific focus is on: a) Advanced Oxidation Processes (AOPs), catalytic and photocatalytic technologies (PhotoCatTech) for environmental protection; b) Development and application of analytical methods for the determination of pollutants and degradation products in catalytic processes and environmental media; c) Chemical Technology for the removal of pollutants from aqueous systems (Adsorption, Photodegradation, pyrolysis, etc); d) Environmental fate and physicochemical behaviour of pollutants (transport, adsorption, degradation). He has published more than 230 publications in international peer-reviewed high impact scientific journals (e.g. Appl. Catal. B: Environ., Environ. Sci. Technol., Chem. Eng. J., Water Res., etc.) and book chapters of international publishers (Springer, Wiley, Taylor & Francis) that have received more than 15600 citations and has an H-index=57. He has communicated more than 270 communications in national and international conference and workshop proceedings. Finally, he holds 2 patents from the Hellenic Industrial Property Organization. He was the co-author of the book entitled ''Instrumental Environmental Analysis'' eds. Tziola and the Editor of the book ''Antifouling Paint Biocides'' Handbook of Environmental Chemistry, Springer-Verlag. He has been participated in >38 national and European research projects. He was/is the supervisor of 14 Ph.D. theses and 30 MSc theses. Other activities include the following: He acts as a reviewer for more than 120 international peer-reviewed journals and for national (IKY, GSRT) and international research proposals (Israel, Croatia, Romania, Cyprus and Holland). He is a member of 6 national, international scientific associations and member of organizing /scientific committee of > 35 conferences.

Hrissi K. Karapanagioti is a Professor of Environmental Chemistry at the Department of Chemistry in the University of Patras. She has been studying sorbents and biochars since 2000 and microplastics since 2004. She has co-edited two books related to plastic and microplastic pollution (from IWA and Springer Nature Publishers), co-authored several papers (Google Scholar >9000 citations, Stanford list of 2% World's Top Scientists) and co-organized and presented as invited speaker in several conference sessions with GESAMP, UNEP, G20, IAEA,

EGU, NOAA, British Council, European Parliament, etc. Her research interests include the development, characterization and evaluation of sorbent materials and the degradation of plastics to microplastics and microplastic interaction with microbes and organic pollutants. She is also interested in educating the general public on preventing plastic pollution and valorizing biomass by-products.

Dr. George Z. Kyzas is a Professor and the President of the Department of Chemistry at the Democritus University of Thrace in Kavala, Greece. He serves as the Director of the M.Sc. program in Cosmetic Chemistry and leads the "HEPHAESTUS" Laboratory at the School of Science. With an extensive academic background, including a Ph.D. in Chemical Technology from the Aristotle University of Thessaloniki, his expertise encompasses Chemical Technology, Adsorption, Materials Synthesis, Nanochemistry, and Wastewater Treatment. Dr. Kyzas is an internationally recognized researcher, having published over 350 scientific papers with an h-index of 87 and more than 24,500 citations. His prolific output also includes 8 books, 44 book chapters, and 3 patents. He has been consistently honored by Stanford University as one of the World's Top 2% Scientists (2019–2024) and was named a Highly Cited Researcher by Clarivate in 2022. In addition to his research, he is an active Editor for Environmental Science and Pollution Research and has reviewed for approximately 200 scientific journals. Dr. Kyzas also represents the Association of Greek Chemists in the EuCheMS Division of Solid State and Materials Chemistry. His leadership in numerous national and international research projects focuses on innovative solutions for water purification and sustainable materials.

Dr. Petros Kokkinos is Molecular Biologist and Associate Professor at the School of Science and Technology of the Hellenic Open University (HOU). He has studied Biological Sciences at the University of Trieste, Italy, and holds a PhD from the Polytechnic School of the University of Patras, Greece. He has received nine scholarships and has conducted research in UK, USA, Spain, and Switzerland. He is currently member of the Laboratory of Sustainable Waste Management Technologies (LSWMT Lab) and the Director of the Postgraduate Study Program 'Cultivations under cover-Hydroponics' of the HOU (since 2023). He has participated in 17 research projects, such as: 1) BioNFate (ARISTEIA I), "Fate and transport of biocolloids and nanoparticles in groundwater and effects of polluted water on public health", 2) Archimedes III, "Wastewater Reuse – Development of a risk assessment model for public health protection", 3) INVALOR research infrastructure (research infrastructure for waste valorization and sustainable management of resources), 4) Hybrid landfill leachate treatment model combining the use of advanced oxidation processes and membrane technology, 5) Resource oriented wastewater and sludge treatment in Greece and Germany. He has published 64 peer reviewed scientific papers (Google Scholar: 2793, h-index: 28, i10h-index: 47, 28/01/2025), 51 publications in international conferences, 29 publications in Greek conferences, a scientific book and a chapter of a scientific book. He is Editorial Board member of "Environments", Guest Editor of 3 Special Issues, invited reviewer in 16 scientific journals and Associate Editor in Environmental Water Quality (specialty section of Frontiers in Water). He has given 28 invited talks, and participated in 8 training seminars. He has organized 2 conferences, 2 symposiums, 10 summer schools, 5 seminars, and 5 workshops. He has supervised 45 postgraduate thesis. His research interests include Water Pollution, Wastewater Reuse, Biology of Wastewater Treatment, Environmental Virology, Risk Assessment and Public Health.

Ir. Ts. Dr. Teo Fang Yenn is a Professor of Water and Environmental Engineering and serves as the Associate Dean of Industry Liaison and Accreditation at the University of Nottingham Malaysia (UNM). With over 25 years of extensive experience in engineering, research, and international leadership, he is a recognized expert in sustainable development, disaster resilience, and water environmental governance. He holds a Ph.D. in Civil Engineering from Cardiff University, UK, and has a distinguished track record in strategic leadership across academia, government, and industry. Throughout his career, Professor

Teo has held prominent roles, including Head of River and Flood Management at the National Water Research Institute Malaysia and Deputy Director of R&D and Innovations at the National Water Services Commission. His professional excellence has been honored with numerous accolades, such as the Tan Sri Ir. Hj. Yusoff Prize (2024) and the Vice-Chancellor's Medal (2020). He is a Fellow of several prestigious organizations, including the Academy of Engineering and Technology of the Developing World (AETDEW) and the Institution of Engineers Malaysia (IEM). Additionally, he serves as the Editor-in-Chief of the IEM Journal and as an Independent Expert for the UNESCO Intergovernmental Hydrological Programme.

Damianos Kalpakidis is an Environmental Impact Assessment (EIA) Specialist and Ecology Expert with a strong academic and professional background in biodiversity conservation, environmental planning, and environmental impact assessment. He holds a Master's degree in Sustainable Management of Protected Areas and a Bachelor's degree in Environmental Engineering. He is a Researcher at the Department of Public and Community Health, University of West Attica, where his research focuses on the intersection of Nature-Based Solutions (NbS) and Public Health. Professionally, he has extensive experience in environmental impact assessments, ecological baseline studies, and species-specific mitigation planning, having contributed to major infrastructure projects. His expertise spans biodiversity protection measures, Natura 2000 assessments, and environmental permitting processes. Damianos Kalpakidis is a member of HELECOS, the Technical Chamber of Greece (TEE).

Prof. Dr.-Ing. Heidrun Steinmetz is a distinguished Professor for Resource Efficient Wastewater Technology at the RPTU University Kaiserslautern-Landau in Germany. With an extensive career spanning academia and industry, she also serves as the Chief Executive Officer of the Center for Innovative Wastewater Technology (tectraa). Prior to her current role, she held the Chair for Sanitary Engineering and Water Recycling at the University of Stuttgart, where she co-founded the Stuttgart Water Research Centre. She holds a Doctorate in Engineering (Dr.-Ing.) and a Diploma in Biology from the University of Kaiserslautern. Professor Steinmetz is a leading expert in circular economy solutions for the water sector. Her primary research focus includes resource-oriented wastewater treatment, nutrient recovery (specifically phosphorus), energy efficiency, and the production of biopolymers from sewage sludge. She is also recognized for her work on technical and nature-based solutions for greywater and blackwater treatment. Beyond her research, she holds significant leadership positions within the German Water Association (DWA), including serving as the spokeswoman for the technical committee on "Resource Orientated Sanitation". Her scientific contributions have been recognized with prestigious awards, such as the Zukunftspreis Re-Water Braunschweig for her innovative work on phosphate recovery. She remains a key figure in shaping European wastewater policy and technology through her various editorial and advisory roles.

Prof. Jeff Campkin is a multi-disciplinary water, climate and sustainable development specialist with 30 years of experience in water, fisheries and agriculture governance, policy development, resource allocation, stakeholder engagement, research, education and strategic advocacy. With a strong background in government, research organisations, NGOs and academia, Jeff promotes research-policy-practice connectivity, transdisciplinarity, utilisation of all forms of knowledge, and broad collaboration. He is an adjunct professor (Water Resource Management) at the Institute of Agriculture, University of Western Australia, Impact and Engagement Manager for the Institute for Study and Development Worldwide (IFSD), Senior Associate with Ricardo, External Advisor to the Myanmar Water Academy, and a member of the International Committee on Irrigation and Drainage Working Group on Capacity Development, Training and Education. With tertiary qualifications in natural resources law and applied science, and a strong commitment to capacity development, Jeff has designed and delivered new water education for participants from over 70 different countries. In 2014, Prof Camkin co-founded the World Water Policy

Journal as a platform to support the world's emerging water leaders and thinkers, and he continues as co-Editor-in-Chief.

George Arampatzis is an associate Professor at the School of Production Engineering and Management of the Technical University of Crete. His research interests are formed around Green and Digital development. The central pillar of his research activities is the application of innovative solutions at the intersection of Production Systems and Information & Communication Technologies, for delivering high-value services in dynamically changing environments, incl. Industrial, Water, Energy and Environmental systems. Emphasis is placed on developing advanced process simulation modelling approaches to create industrial Digital Twins and Cyber Physical Systems. His research activities have resulted in more than 160 publications in peer-reviewed international scientific journals and conference proceedings, 6 educational books and 5 chapters in edited books. He is the founder and coordinator of the Digital and Industrial Innovations Research Group (indigo) at TUC, involving more than 20 researchers. He is the Principal Investigator of 18 Horizon, 2 Interreg and 2 National ongoing research projects, being the Project Coordinating for 4 and Technical Coordinator for 2 of them. He is the founder and CEO of the spin-off company Viridiance Insights (https://www.viridiance.eu/), the first spin-off established at the Technical University of Crete under the legislative framework of Law 4864/2021. He is a founding member and coordinator of the In-Crete Innovation Alliance, bringing together all academic/research institutions of Crete and private enterprises, with the aim of promoting circular economy actions in Crete.

Dr. Spyros G. Pavlostathis is Professor of Environmental Engineering at the School of Civil and Environmental Engineering, Georgia Institute of Technology, Atlanta, GA. A recipient of the Fulbright Scholarship, Dr. Pavlostathis completed his MS and Ph.D. in Environmental Engineering at Cornell University after obtaining his Diploma in Agricultural Engineering at the Agricultural University of Athens, Greece. He is a Board Certified Environmental Engineer Member of the American Academy of Environmental Engineers and Scientists (AAEES), and a Fellow of International Water Association (IWA), Water Environment Federation (WEF), and American Society of Civil Engineers (ASCE). Dr. Pavlostathis is internationally recognized for his expertise in the areas of environmental biotechnology and bioprocess engineering for the bioremediation of contaminated natural systems and the treatment of municipal and industrial wastewater, as well as the kinetics, modeling, and simulation of bioprocesses. His research includes bioenergy and biofuels; bioavailability, fate and biotransformation of recalcitrant organic compounds; the biotransformation of emerging environmental contaminants; disinfectant-induced antibiotic resistance; as well as microbial fuel cell and bioelectrochemical technology. Has published over 180 peer-reviewed papers and authored over 250 publications including books or book chapters.

Danae Venieri serves as Professor in Environmental Microbiology in the School of Chemical and Environmental Engineering, Technical University of Crete. She holds a Bachelor Degree in Biology (1999) and a PhD in Environmental Microbiology (2005) from University of Patras, Greece. She began her academic career in Technical University of Crete in 2008 as Lecturer and she established the lab of Environmental Engineering in the School of Chemical and Environmental Engineering. The main research interests focus on a) the application of novel disinfection techniques for the inactivation of various pathogenic microorganisms contained in water and wastewater, including bacteria, viruses and parasites. Recent research studies deal with Advanced Oxidation Processes (heterogeneous photocatalysis/solar photocatalysis, photoelectrocatalysis etc.) and the application of novel photocatalytic materials in lab- and pilot-scale applications; b) the dispersion of antibiotic resistant bacteria and antibiotic resistance genes into the aquatic environment and their elimination rates during disinfection techniques and wastewater treatment methods; c) the

biodegradation of pollutants using various microorganisms; d) the investigation of ecotoxicity of emerging micro-contaminants, including
antibiotics and estrogens, and the effect of their by-products towards microbial consortia and e) the assessment of microbiological quality of the aquatic environment through the monitoring of pathogenic microorganisms and the risk assessment for public health. She is Executive Editor of the Journal of Chemical Technology and Biotechnology (Publisher: John Wiley & Sons on behalf of the Society of Chemical Industry) and Editorial Board member of Catalysts (MDPI). Prof. Venieri is currently (2023 2026) the Vice Rector of Finance and Development of Technical University of Crete. She has participated to/coordinated several EU/national funded research projects and her publication record includes 73 papers in referred journals, 4 book chapters and more than 100 presentations at international conferences.

Professor Dr.-Ing. habil. Juergen Wiese is a distinguished expert in Urban Water Management and currently serves as a Professor at the Magdeburg-Stendal University of Applied Sciences in Germany. He is also the Director of the Institute for Water Management and Eco-Technologies (IWO) and leads the "Sustainable Water Management" research group at the Fraunhofer Institute for Factory Operation and Automation (IFF) in Magdeburg. With a robust academic background, Professor Wiese holds a Diploma in Civil Engineering and a Doctorate in Engineering (Dr.-Ing.) from the Technical University of Kaiserslautern, where he also completed his Habilitation. Throughout his career, Professor Wiese has held significant positions in both academia and the private sector, including serving as a Professor for Urban Water Management at the University of Luxembourg and working as a senior consultant and project manager in environmental engineering firms. His professional expertise encompasses anaerobic processes, biogas technology, and advanced wastewater treatment systems. He has been actively involved in international research collaborations, particularly with institutions in China, and has served as a member of various scientific committees, such as the German Water Association (DWA). His leadership in sustainable water management and his extensive experience in engineering consultancy make him a prominent figure in the field of environmental technology and resource efficiency.

Dr. Konstantinos Moustakas is Senior Researcher, with PhD in waste management. He works as Laboratory-Teaching Staff in the Unit of Environmental Science & Technology (www.uest.gr) of the School of Chemical Engineering of the National Technical University of Athens. He has actively participated in more than 80 projects in many countries. He has long teaching experience and considerable international experience as senior researcher and project manager. He has cooperated with the European Commission directly, as he acted as TAIEX expert (institutional building) in many countries. He has long training activity in the field of environment in different countries and has been working for the Hellenic Open University as Collaborating Teaching Staff in the field of solid waste for the last eleven years. He has published a large number of articles in journals and conferences, while he has had the key role in the organisation of a large number of international conferences. Indicatively, he is the Head of the Organising Committee and key member of the Scientific Committee for the successful series of conferences on Sustainable Solid Waste Management. He is currently Secretary General of the Hellenic Solid Waste Management Association.

Grigorios L. Kyriakopoulos (Dr.) serves as a Teaching Laboratory Staff (TLS) at the School of Electrical and Computer Engineering of the National Technical University of Athens (NTUA), Greece. He has obtained a broad educational background, including 2 PhDs: in Low Carbon Economy (DUTh, Greece) and in Chemical Engineering (NTUA, Greece), as well as diplomas in Chemical Engineering NTUA (MEng, MSc in Technological-Economic Systems, PhD, PostDoc), in Environment (BSc, 2MSc in Environmental Design HOU: a) large-

scale infrastructure projects and b) cities/buildings, PhD), in Business Administration (BA and MA), in Greek Culture OUC (BA and MA), in Energy (MSc in Energy, Heriot-Watt University, UK), in Education (Postgraduate Certificate in Education, PGCE). In his professional-academic career Dr. Kyriakopoulos has more than 25 years of teaching service at NTUA, as well as 10 years of teaching service at other University Schools in Greece, such as: Hellenic Naval Academy (2 years), Merchant Marine Academy of Aspropyrgos (2 years) and School of Pedagogical and Technological Education of Athens (ASPAITE) (4 years). He is a reviewer of more than 7000 manuscripts in 540 scientific journals, editorial board member in 36 scientific journals (past and ongoing editorial service, totally), and the (co)author of more than 150 publications in 70 scientific journals and 30 scientific announcements in peer-reviewed scientific conferences. His research specialization fields are: chemical engineering, environmental engineering, business and management, circular economy, development economics, environmental systems based on physico-chemical remediation methods, waste management from organic pollutants, energy focusing on renewable energy sources, analytical techniques, behavioural ecology. Dr. Kyriakopoulos has been included in the top 2% of top-cited scientists in the world, based on the number of citations his published works received according to the list of most influential researchers globally, which has been released by Stanford University for the 5 consecutive years 2020-2024, as well as for the period 1996-2022-2023-2024.

Popi Karaolia is a senior post-doctoral researcher at the Nireas-International Water Research Center (Nireas-IWRC) of the University of Cyprus and a consultant for the United Nations Environment Program (UNEP) on wastewater surveillance. Her research expertise and focus lie in the development and application of methods and protocols for the detection and enumeration of human health-related biomarkers such as pathogenic bacteria, viruses and antimicrobial resistance (AMR) determinants in wastewater matrices. During the pandemic, she led the application of a monitoring system of SARS-CoV-2 in urban wastewater in Cyprus, with the purpose of evaluating the status of the pandemic through the application of systematic monitoring campaigns in urban and airport wastewater. She currently works on integrating and elevating wastewater surveillance within public health frameworks, with her work supporting the development of early-warning systems, health and environmental risk assessment on AMR, and policy development. She also has expertise in the determination of the presence of various contaminants of emerging concern such as antibiotics and antibiotic resistance determinants before, during and after wastewater treatment processes, including biological and advanced chemical oxidation treatment processes. She is currently involved, in various collaborative water-related international research projects and is a member of the Journal of Environmental and Chemical Engineering (JECE) Editorial Board.

Dr. Eleni Grilla is a Postdoctoral Researcher at the Sustainable Waste Management Technologies Laboratory with a PhD and MSc in Chemical Engineering from the University of Patras and a Diploma in Environmental Engineering from the Technical University of Crete. Her research focuses on the application of Advanced Oxidation Processes for the degradation of emerging pollutants (antibiotics, pharmaceutical compounds, endocrine disruptors) in aquatic systems. She has experience in catalyst characterization techniques (BET, SEM, TEM, XRD) and analytical techniques (HPLC, LC-MS/MS), which are used for the quantification of organic compounds. She has contributed to over 10 funded research projects focusing on waste management, with a particular emphasis on circular economy practices aimed at protecting the environment. Her published work includes over 15 articles in international scientific journals, 17 publications in international and national scientific conferences (citation index: 254, h-index: 7, Scopus, 2/2/2026). She has served as an Adjunct Lecturer at the Department of Agriculture of the University of Patras, at the Liaoning University of Technology, as well as at the Department of Environment of the Ionian University.

Ekavi Aikaterini Isari, Ph.D., is an environmental chemist and is a Postdoctoral Researcher at the laboratory of Sustainable Waste Management Technologies whose research focuses on waste management, wastewater treatment, and soil remediation. She holds her Ph.D. from the Hellenic Open University, specializing in advanced analytical and environmental technologies. Her research career is marked by participation in high-impact projects, including "Greece 4.0" for digital transformation in manufacturing and "BIOCOM," which investigates the use of biochar and earthworms to enhance soil fertility. Dr. Isari has a significant publication record in prestigious international journals such as Science of The Total Environment and Water, covering topics like microplastics in agricultural soils, biosolids characterization, and the degradation of pharmaceutical compounds using cold plasma. Her work also explores the safe reuse of landfill leachates for irrigation and the valorization of agricultural wastes into biochar. Beyond publications, she has presented her findings at over 20 international conferences, and possesses extensive expertise in analytical techniques such as LC-MS/MS, HPLC, and FTIR spectroscopy.

Wang Li is a distinguished researcher at the China Institute of Water Resources and Hydropower Research (IWHR) in Beijing, with a career spanning over 30 years in the fields of water history, hydrology, and water resources. He holds a B.Sc. in Hydrology and Water Resources from Hohai University and an M.Sc. in Hydroinformatics from the prestigious UNESCO-IHE in Delft, The Netherlands. Currently a PhD Candidate specializing in Water Resources History, his work focuses on the evolution of water management practices and their historical significance. Mr. Wang's research expertise is centered on the historical water technology of ancient China, where he explores the intersection of traditional engineering and sustainable water governance. Throughout his professional journey, he has held key positions, including a tenure as a researcher at the Singapore-Delft Water Alliance (SDWA) at the National University of Singapore. A passionate advocate for the protection of water heritage, he actively promotes international cooperation between governments and academic organizations. Through his extensive involvement in organizing academic conferences and his numerous scientific publications, Mr. Wang Li continues to contribute significantly to the global understanding and preservation of historical water systems.

Dr Dimitrios N. Bikiaris is Chemist and Professor at the Chemistry Department of Aristotle University of Thessaloniki. His research interests include the synthesis and characterization of polyesters and copolymers, biobased and biodegradable polymers, preparation and characterization of composites and nanocomposites, polymer blends, 3D printing, polymer recycling, modification of natural polymers, use of polymers for contaminants removal, microplastics and application of new biocompatible polymers in tissue engineering and pharmaceutical technology. His scientific work has been published in more than 642 papers, with over 33.500 citations, and h-index 94 (scopus). He has also written 4 chapters in international scientific books and he holds 17 international and 2 Greek patents. He has developed strong collaborations with researchers from International Universities and Research Centers, with professors and researchers from Greek Universities and with Greek companies. He has participated in more than 76 research projects and is coordinator in 3 EU funded projects. As simple and invited speaker, he has participated in more than 200 international and 50 national conferences. He has been a reviewer in more than 200 international journals and member of editorial committees in more than 10 scientific journals. (https://scholar.google.gr/citations?user=irW61n0AAAAJ&hl=en, https://bikiarislab.wixsite.com/bikiarislab).

Professor Deeksha Katyal is a distinguished academic and researcher with over 25 years of experience in environmental engineering, science diplomacy, and policy advocacy. She currently serves as a Professor at Guru Gobind Singh Indraprastha University in Delhi, where she leads significant research and administrative initiatives, including the internationalization of academic programs. Holding a Ph.D. in Environmental Engineering from the University of Delhi, her expertise is centered on water quality assessment, health risk modeling, and the remediation of emerging contaminants such as microplastics. Professor Katyal is a prominent figure in international water governance, serving as the General Secretary of the International Water Association (IWA) Specialist Group on Water in Ancient Civilizations. Her work is deeply aligned with the UN Sustainable Development Goals (SDGs), focusing on integrating traditional water heritage with modern geospatial technologies for sustainable resource management. An acclaimed leader in her field, she has received numerous accolades, including the "Most Impactful Water Management Leader" award (2025) and the Aqua Foundation Excellence Award. Her contributions extend to national policy, having been recognized by the Prime Minister of India for her innovative recommendations on river mapping and management. As a global educator, she frequently delivers expert lectures at prestigious forums worldwide, fostering international collaborations for environmental resilience.

Ioannis Katsoyiannis is a Full Professor at the department of Chemistry of Aristotle University of Thessaloniki, Director of the Institute of Sustainable Water Management and Water Law of the European Public Law Organization and President of the Hellenic Industrial Property Academy. He is an expert in water and wastewater treatment technologies, water reuse and circular economy. He was recipient of prestigious international fellowships, such as from Alexander von Humboldt Foundation, the IKY, the DAAD, and the Swiss National Foundation. He is the author of more than 100 research papers, which have received more than 9000 citations (google scholar, February 2026). He is scientific responsible in several research projects with an accumulative budget of more than 2.5 million euros and has been invited more than 40 times to give lectures worldwide in international conferences. In 2023, during the United Nations Water Conference, he gave a statement about the world water situation at the General Assembly of the United Nations in New York. Professor Katsoyiannis used to be the President of the Association of Greek Chemists from 2022 till 2024, member of the executive board of EuChemS and Chair of the Division of Chemistry and Environment of EuChemS. Since 2022 is serving as an academic advisor for the Onassis Foundation and from 2018 he is associate editor for the journal Environmental Science and Pollution Research. At the Department of Chemistry of the Aristotle University of Thessaloniki, he co-teaches the following courses at the undergraduate program: Chemical Technology, Principles of Environmental Technology, Processes in Biotechnology, Physical Processes and Industrial Processes Laboratory.

Zhiqiang Zhang is a distinguished academic and researcher currently serving as a Professor at the Xi'an University of Architecture and Technology (XAUAT), where he also holds the position of Deputy Director of the Teaching and Research Section of Water Supply and Drainage. Additionally, he serves as the Executive Deputy Director of the Shaanxi Provincial Key Laboratory of Environmental Engineering. Professor Zhang's academic foundation includes a Bachelor of Science from Shenyang Jianzhu University and both a Master's and Ph.D. from the prestigious Harbin Institute of Technology. His research expertise is centered on environmental engineering, with a specific focus on the interfacial mechanisms of micro-nano bubbles, odor control in sewer networks, and the mitigation of hazardous substances in urban water systems. As a prolific scholar, he has served as the Principal Investigator for numerous high-level projects funded by the National Natural Science Foundation of China (NSFC). His work is widely published in top-tier journals, including Environmental Science & Technology, Water Research, and the

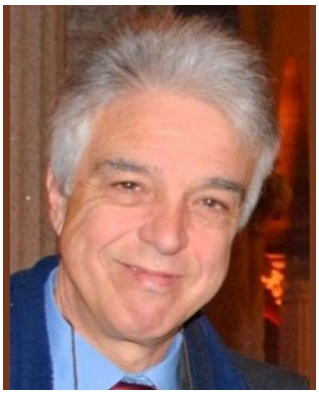
Journal of Hazardous Materials. Recognized for his contributions to the field, Professor Zhang has received several accolades, including the "Outstanding Young Talents Support Program" of Shaanxi Universities and the First Prize of Outstanding Scientific Research Achievement. He is also an active member of the International Water Association (IWA) and the Water Supply and Drainage Professional Committee of the Shaanxi Provincial Civil Engineering and Architectural Society.

Jinsuo Lu is a distinguished expert in environmental engineering, currently serving as the Executive Vice Dean of the Graduate School and Dean of the School of Environmental and Municipal Engineering at the Xi'an University of Architecture and Technology. He concurrently holds the position of Director of the Shaanxi Provincial Key Laboratory of Environmental Engineering. Professor Lu's academic journey is rooted at the Xi'an University of Architecture and Technology, where he earned his Bachelor's, Master's, and Ph.D. between 1995 and 2006. Since joining the faculty in 2004, he has ascended the academic ranks from Lecturer to his current tenure as a Professor. His research specializes in the management and technological advancement of urban water systems, including the control of hazardous gases in drainage networks and drinking water scale control. As a Principal Investigator, he has led high-impact projects under the National Key Research and Development Program of China and the National Natural Science Foundation of China (NSFC). His extensive publication record includes first-authored books and numerous papers in prestigious journals such as Water Research and Environmental Science & Technology. Professor Lu's contributions have been recognized with several prestigious accolades, including the National Leading Talent Program (2025), the Shaanxi Provincial Teaching Master (2023), and the Baosteel Excellent Teacher Award (2018). He is also an active contributor to professional governance, serving as the Deputy Director of the Professional Committee on Resource Recycling for the Chinese Society for Natural Resources.

Prof. Dr. Eng. **Mohammed Matouq** is a distinguished expert in Chemical and Environmental Engineering, currently serving as a Full Professor at the Faculty of Engineering Technology at Al-Balqa Applied University. His extensive academic background includes a Master's degree in Biotechnology from the University of Jordan and a Ph.D. in Chemical Reaction Engineering from Nagoya University, Japan, supported by a prestigious grant from the Japanese Ministry of Education. Professor Matouq's professional trajectory spans international organizations and leadership roles, including tenures at the United Nations Centre for Regional Development (UNCRD) in Nagoya and the Ministry of Energy and Mineral Resources of Jordan. Within Al-Balqa Applied University, he has held several high-level administrative positions, such as Dean of Maan Community College and Director of Research and Development. In recognition of his expertise, a Royal Decree was issued in 2012 appointing him to the Board of Trustees of Al-Hussein Bin Talal University. His research contributions focus on sustainable water resources management, ISO 14001 systems, and the application of high-frequency ultrasound in wastewater treatment. An active member of the global scientific community, Professor Matouq is an Associate Editor for several international journals and serves as the Founder and President of the Jordan Japan Academic Society. He remains a prominent figure in engineering professional bodies, including the American Chemical Society and the Jordanian Engineers Association.

Cristina Mejías Molina is a biotechnologist and microbiologist with a PhD in Microbial biotechnology. Her research has focused on exploring and validating passive sampling approaches for viral surveillance in wastewater, groundwater, and reclaimed water, contributing to the development of practical tools for environmental and public health monitoring, including applications in resource-limited settings.

She has participated in several national and European research projects at the interface of public health, environmental surveillance, and applied microbiology, and has co-authored multiple peer-reviewed publications in high-impact international journals. Her scientific interests lie in the development of accessible and scalable tools for viral surveillance to support public health monitoring and decision-making.



Markos Sklivaniotis was born in Patras, graduated from the Chemical Engineering dept of Aristotelion University of Thessaloniki (1977) and received his PhD (1982) from the University of Leeds-UK. He worked for a number of years in petroleum industry in Greece and following that he moved to the water sector serving as Water Treatment and Quality Manager in the water municipal company responsible for the greater area of the city of Patras (220.000 pe), involved in the design supervision and operation of drinking water and wastewater treatment facilities. He was also involved in the activities of the Hellenic Association of Municipal Water Suppliers. Following his retirement (2014) he functions as adviser and representative for the European Affairs of the Association.

Chrysi A. Papadimitriou is an Assistant Professor at the Laboratory of Ecology and Environmental Science, Faculty of Crop Science, Agricultural University of Athens, and Chair of the University's Sustainability Committee. She holds a PhD from the Department of Chemical Engineering, Aristotle University of Thessaloniki, focusing on the removal of phenol and hexavalent chromium from industrial wastewater using microbial processes. She conducted postdoctoral research (2014–2016) on the valorization of aquaculture by-products as soil amendments and on environmental processes for toxic pollutant removal. Her research interests include waste treatment and recovery for the remediation of agricultural ecosystems, ecotoxicological testing, sustainable technologies for soil, water, and air management, biomonitoring and use of biomarkers, and assessment of ecological quality. Her work has resulted in 32 publications in peer-reviewed international journals (h-index: 13; citations: >800). She has extensive research and teaching experience in soil and water pollution, environmental engineering, and ecotoxicology, and has participated in numerous European and national research projects focusing on pollution monitoring, waste valorization, microplastics analysis, and ecosystem risk assessment.

B. Programme Structure

Programme Thematic Units & their Description*:*

Teaching Unit 1. Linking Climate Change Impacts and Wastewater Treatment Strategies

Thematic Unit 1 focuses on the interconnections between climate change, water resources, and wastewater management. The lectures examine wastewater reuse in water-stressed areas, interdisciplinary frameworks for water risk management, circular and nature-based solutions, as well as the historical role of water in shaping civilizations. Furthermore, the sessions highlight how sustainable water management strategies can enhance climate resilience while supporting environmental and social development.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Ioannis Kalavrouziotis

Teaching Unit 2. Sustainable Agricultural Practices through Wastewater Reuse and Treatment

Thematic Unit 2 is dedicated to the role of treated wastewater in sustainable agriculture. Topics include the adaptation of agricultural systems to irrigation with treated water. The lectures emphasize both the opportunities and the challenges of safely integrating wastewater reuse into agricultural practices.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Panagiotis Kanatas

Teaching Unit 3. Catalysis in Wastewater Treatment. Processes and Innovations

Thematic Unit 3 deals with advanced analytical and catalytic technologies for wastewater treatment. The presentations cover emerging contaminants, the use of high-resolution mass spectrometry for their determination, hybrid photocatalytic materials, and advanced oxidation processes for the removal of micropollutants.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Ioannis Konstantinou

Teaching Unit 4. Adsorption Mechanisms and Adsorptive Materials in Wastewater Management

Thematic Unit 4 focuses on adsorption mechanisms and the development of advanced adsorptive materials for wastewater treatment. Topics include tertiary treatment applications, novel methods for removing specific pollutants such as phenols, and the use of alternative super-adsorbent and selective materials. The lectures highlight the importance of materials science in improving pollutant removal efficiency.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Hrissi Karapanagioti

Teaching Unit 5. Microbiology, Public Health, and Wastewater Management

Thematic Unit 5 lectures link wastewater management with public health and microbiological risks. Topics include the EU regulatory framework for viral risk management and innovative separation technologies. T.U.5 highlights wastewater treatment plants as critical infrastructure for safeguarding both human health and ecosystems.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Petros Kokkinos

Teaching Unit 6. Circular Approaches in Wastewater Management

Thematic Unit 6 focuses on the field of circular economy in wastewater and industrial wastewater management. The lectures examine the transition from treatment to resource recovery, new environmental paradigms for sustainability, the role of policy and practice in driving change, as well as the integration of circular and digital pathways.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Heindrun Steinmetz

Teaching Unit 7. Energy Valorization of Sewage Sludge and Biosolids

Thematic Unit 7 focuses on the valorization of sludge and biosolids through energy and resource recovery. Topics include the anaerobic digestion process, the optimization of phosphorus removal, and the role of biomass in energy recovery. The lectures emphasize closing material and energy loops within wastewater treatment systems.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Spyros Pavlostathis

Teaching Unit 8. International Workshop on Wastewater & Biosolids Management

This thematic area focuses on wastewater and biosolids management through international practices and innovations. It provides the opportunity for the presentation of research results and applied studies in e-poster format, while short presentations (pitches) highlight new technologies, solutions, and challenges in the field. The teaching unit enhances knowledge exchange between researchers, professionals, and stakeholders, promoting cooperation at both regional and international levels.

Duration in hours: 4 hours, Value in ECTS: 0.16 ECTS

Lead Instructors: Ekavi-Aikaterini Isari, Petros Kokkinos, Ioannis Kalavrouziotis

Teaching Unit 9. Wastewater Treatment Plants: History, Innovation, and Impact

Thematic Unit 9 explores the historical evolution and technological lineage of Wastewater Treatment Plants (WWTPs), tracing their development from rudimentary processing methods to state-of-the-art innovations. The curriculum analyzes technological milestones, the implementation of good practices, and the multidimensional impact of these infrastructures on environmental sustainability and social well-being.

Duration in hours: 5 hours, Value in ECTS: 0.2 ECTS

Lead Instructor: Eleni Grilla

Teaching Unit 10. Hands-on Wastewater Analysis: Laboratory and Video Exercises

Thematic Unit 10 is dedicated to applied training through laboratory-based wastewater analysis and practical exercises utilizing specialized instrumentation and audiovisual material. Participants gain hands-on experience in advanced analytical methodologies and treatment concepts, effectively bridging the gap between theoretical frameworks and field applications.

Duration in hours: 6 hours, Value in ECTS: 0.24 ECTS

Lead Instructor: Ekavi-Aikaterini Isari

Detailed Timetable

A/A	Title of unit	Date	Start-End Time Hours	Hours	Type (Synchronous, Asynchronous, In-person, Practical Training)	*Instructor*
1	**Linking Climate Change Impacts and Wastewater Treatment Strategies**	**Monday 13 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Prof. Laila MANDI Prof. Fernado Nardi Prof. Hasan Volcan Oral Prof. JinSuo Lu and Prof. Zhiqiang Zhang
2	**Sustainable Agricultural Practices through Wastewater Reuse and Treatment**	**Tuesday 14 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Prof. Ioannis Katsogiannis Ass. Prof. Panagiotis Kanatas Prof. Tingting Gong Kittas Constantinos
3	**Catalysis in Wastewater Treatment. Processes and Innovations**	**Wednesday 15 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Prof. Dimitra Lambropoulou Ass. Prof. Kalliopi Ladomenou Prof. Ioannis Konstantinou Prof. Mohammed Matouq
4	**Adsorption Mechanisms and Adsorptive Materials in Wastewater Management**	**Thursday 16 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Dimitrios Bikiaris Prof. Hrissi Karapanagioti Prof. Georgios Kyzas
5	**Microbiology, Public Health, and Wastewater Management**	**Friday 17 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Prof. Petros Kokkinos Prof. Danai Venieri Dr. Cristina Mejias Damianos Kalpakidis
6	**Circular Approaches in Wastewater Management**	**Monday 20 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Prof. Dr.-Ing. Heidrun Steinmetz Prof. Deeksha Katyal Prof. Jeff Campkin Ass. Prof. Georgios Arampatzis

7	**Energy Valorization of Sewage Sludge and Biosolids**	**Tuesday 21 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Prof. Emeritus Spyros Pavlostathis Professor Dr. Habil. Jurgen Wiese Dr. Moustakas Konstantinos Grigorios L. Kyriakopoulos
8	**International Workshop on Wastewater & Biosolids Management**	**Wednesday 22 July**	**9:00 -13:00**	**4**	Synchronous	E -poster session - Pitches
9	**Wastewater Treatment Plants: History, Innovation, and Impact**	**Thursday 23 July**	**9:00 -13:00**	**4**	Synchronous, In-person	Dr. Parthenopi Karaolia Dr. Wang Li Professor Ir. Ts. Dr. Teo Fang Yenn Prof. Dr. Xiao Yun Zheng Dr. Wang Li
10	**Hands-on Wastewater Analysis: Laboratory and Video Exercises**	**24 -29 July**	**-**	**6**	Asynchronous	Laboratory Exercises & Video Presentations
-	**Self-Paced Educational Modules & Interactive Assessments**		-	8	Asynchronous	Educational Material, Articles, Quizzes, Forum, and Exercises

C. Programme Implementation Methodology, Evaluation & Certification

Teaching & Attending:

The teaching design follows the methodology that supports Open and Distance e-learning. Teaching through an asynchronous remote education system is mainly based on the asynchronous study of educational material and development of activities, in order to ensure a high degree of learner autonomy.

Asynchronous Learning: The instructional process is primarily based on autonomous study of digital content and the completion of structured activities. This modality provides learners with the necessary flexibility to progress at their own self-regulated pace.

Synchronous Learning: The synchronous component comprises live tele-conferencing sessions featuring presentations and interactive discussions. These sessions are designed to enhance instructor-led engagement and foster constructive dialogue among participants.

Educational Material & Digital Platform

- Phased Content Delivery: Educational and supplementary materials are released on a scheduled weekly basis, ensuring a systematic and manageable knowledge acquisition process.
- Accessibility: All resources are accessible online via the Learning Management System (LMS), with offline functionality supported through downloadable formats.
- Material Format: Content is optimized for digital consumption (e-reading) while maintaining high-fidelity printability for users who prefer physical media.
- Interactive Assessment: The platform facilitates the submission of assignments, ensuring streamlined evaluation and timely feedback from the scientific committee.

Detailed Program Components

The curriculum incorporates a diverse range of educational activities:

- **Lectures**: Delivered via both Synchronous (S) and Asynchronous (AS) modalities.
- **Laboratory Exercises & Instructional Videos**: Focused on practical skill-building (AS).
- **Virtual Technical Visits**: Video-based tours of Wastewater Treatment Plants (WWTPs) (AS).
- **International Workshop**: Featuring 5-minute "pitch" presentations of e-Posters, providing a platform for participants to showcase their research (S).
- **Academic Activities**: Critical review of selected scientific literature and completion of specialized projects to reinforce the learning objectives (AS).

Description of educational material: The educational resources provided include comprehensive video lectures and audio-visual content, supplemented by speaker presentations in PDF format. Furthermore, the curriculum features instructional laboratory videos demonstrating analytical procedures, alongside virtual field trips and guided video tours of Wastewater Treatment Plants (WWTPs), all supported by an extensive collection of peer-reviewed literature and specialized bibliography.

How trainees are assessed:

Student evaluation for WWSS26 is designed to be supportive and educational, helping participants check their own progress and solidify what they have learned. The grading is based on three main components: online quizzes that test understanding of core concepts (40%), active participation in discussion forums to encourage the exchange of ideas and critical thinking (30%), and practical exercises that focus on applying the course material to real-world problems (30%).

Assessment of the Programme

For the evaluation of the services provided by the Programme at the level of educational work as well as administrative and technical support, the Trainee is asked at the end of the Programme to complete a single questionnaire, which includes specific axes and evaluation indicators, which is processed and followed up by the Internal Assessment and Training Unit of H.O.U.[1]

Type of certificate issued

After the successful completion of the programme, a " Training Certificate" and an "Annex to the Certificate of Training" are issued, which include the following information: a) the duration of the programme in hours, b) the teaching method, c) the credit units (ECTS) and d) the titles of the thematic or teaching units of the programme.

The certificates shall be signed by the Scientific Director of the programme, the President of the L.L.C. and shall be available after the completion of the programme. In case of unsuccessful completion of the Programme, a simple 'Certificate of Attendance' will be issued. In addition, payment of the full tuition fees for the Programme is required for the award of the certificates.

Other Obligations of Trainees

In addition to the successful completion of the programme, the following are required from the trainees **for the award of the Certificate**:

- Full payment of tuition fees
- Acceptance of their participation in the programme assessment process

D. Selection Method & Registration in the Programme

Qualifications and supporting documents required: Undergraduate students in fields related to the summer school's curriculum, proficiency in the English language, and basic computer literacy.

Method of selection of trainees: The alignment of the candidates' field of study with the program's thematic areas.

Way to register in the programme:

The registration in the Programme is done online by submitting a Registration Application Form at https://apps.eap.gr/kedivim_en/web/index.php

Tuition fees and payment method:

Tuition Fees: €200
Payment Method: Single lump-sum payment
Payment Schedule: Due upon registration

[1] According to the Internal Regulation of the L.L.C., Article 8

Discount Policy a 25% discount on tuition fees is applicable to the following categories:

- **Partner Institutions:** Members of organizations or institutions that have an active Memorandum of Understanding (MoU) with the Hellenic Open University (HOU).
- **Group Enrollments:** Organizations or entities with a simultaneous registration of more than ten (10) participants.
- **Student Status:** Active students currently enrolled in National or International Higher Education Institutions.

Tuition fees shall be paid into a bank account of the HOU's Hellenic Research Centre, with the following details:

- Account number (IBAN): GR60 0140 5300 5300 0200 1002 408
- Bank: Alpha Bank
- Bic: CRBAGRAA
- Beneficiary details: Special Account for Research Funds Hellenic Open University

The deposit slip must include the programme code: **80795**, the name and surname of the depositor and the programme title: **Summer School - Wastewater and Biosolids Management (WWSS26)**

Information (name and contact details of the person in charge of the programme secretariat):

Dr. Ekavi-Aikaterini Isari
Laboratory of Sustainable Waste Management Technologies
Hellenic Open University (HOU)
Chemist, M.Sc., PhD
18 Aristotelous St. (Parodos), Patras, 26335, Greece
Tel: +30 2610 367554, +30 2610 367556
Email: ekavi.isari@eap.gr, labSWMT@eap.gr

Amalia Seferiadi
Laboratory of Sustainable Waste Management Technologies
Hellenic Open University (HOU)
18 Aristotelous St. (Parodos), Patras, 26335, Greece
Tel: +30 2610 367557
Email: seferiadiamalia@hotmail.com, labSWMT@eap.gr