

# Environmental Engineering and Management



## Introduction

The Department of Environmental Management was established in 1997. The department enrolled students for the Bachelor Degree program until in 2000 where the Master's program was offered. To cater to the modern demands, the department was renamed the Department of Environmental Engineering in 2001, becoming the first in Taiwan to offer both engineering and management in practice. Today, the department offer courses for a both Bachelor Degree (full-time) and Master's Degree (full-time and part-time).

The Department has shown excellence in teaching, research and development, counselling and professional services over the 21 years since its establishment. The Department has developed a comprehensive education curriculum for the courses and has been awarded the Institute of Engineering Education (IEET) accreditation since 2009, and has won the Ministry of Education awards and Taiwan Accreditation Foundation (TAF) laboratory accreditation. Research and development are important characteristics of the Department. Our faculties' specialties are divided into 'Environmental Engineering and Technology', 'Environmental Monitoring' and 'Environmental Management Analysis'. Each research group develops directions and action plans to consolidate and strengthen its research capacity. Our faculties work closely with one another and with the industries in research projects, garnering an average of over 30 million NTD annually in research grants. Through positive outputs from research and development, the department further improves and expands our teaching, counseling and professional services.



IEET Accreditation



TAF Accreditation



Road Run

## Features

The Department is the first in Taiwan to integrate environmental engineering, environmental economy and environmental management in the courses. In order to effectively conduct cross-disciplinary training and integrated research, the Department consists a team of professionals with specialties in science, technology, economics and management. The department offers applied courses in environmental management, environmental engineering and monitoring, and environmental information systems to equip students with relevant knowledge and practical skills.

The multi-disciplinary curriculum allows students to graduate with sound knowledge in environmental engineering and management techniques, who can meet the needs of current environmental issues and develop a viable solution to environmental problems. Graduating students also have opportunities to work in private and public sectors in environmental engineering and management related industries. To achieve the goal of internationalization, our university and humerous foreign universities have sign a double master's degree course agreement where students can obtain dual master's degrees from our university and overseas universities.



Environmental Education

# Curriculum

Based on the demand in the job market, the Department reviews and adjusts the contents of the curriculum annually to establish up-to-date objectives so that students are equipped with the necessary skills and knowledge that meet the needs of the industry.

## Undergraduate Program

### Required Courses

Introduction to Environmental Engineering, Environmental Chemistry, Introduction to Environmental Management, Pollution Monitoring and Analysis, Statistics, Wastewater Engineering, Solid Waste Treatment

### Environmental Monitoring

Instrumental Analysis, Risk Management, Analytical Chemistry of Environment

### Environmental Management

Energy and the Environment, Green Enterprise, Geographic Information Systems

### Environmental Engineering

Water Supply Engineering, Noise and Vibration, Air pollution control and design approach

## Graduate Program

### Required Courses

Environmental Physics Principles, Environmental Chemistry Principles, Geographic Information Systems, Special Topics of Air Pollution Analysis

### Elective course

Special topics Environmental Monitoring, Special topics Environmental management and system analysis, Special topics environmental engineering techniques

Collaboration with Australia Flinders University



Research Project Presentation



# Featured Research Centers and Laboratories

## Featured Centers

### Green Product Management and Verification Technology Development Center

The Department established the "Green Product Management and Verification Technology Development Center" (Green Center in short), which is one of our characteristic development goals. The Green Center has integrated all professional resources and provides a platform to create and share resources so that the resources can be fully utilized with the highest value output. The center was awarded the TAF certification laboratory in July 2014 and has extended its certification period up to July 2020. The center provides fair and accurate testing data for research and teaching purposes. The center is equipped with instruments such as Elemental Analyzer (EA), ICP-OES, ICP-MS, GC/MS and Flame Atomic Absorption Spectrometer (AA), totaling a value of more than 30 million NTD.

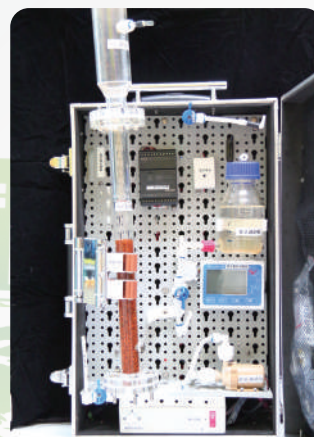


### Sludge Reuse R&D Center

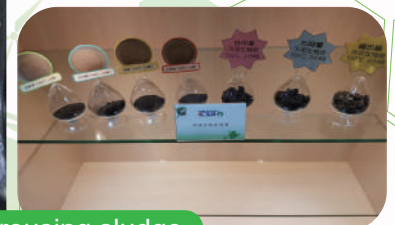
The Department established the "Sludge Resource Reuse R&D Center" (Sludge Center in short) in April 2016. The center utilizes the detection technology of the Green Center to develop new technologies for sludge reuse and soil analysis. The Sludge Center is expected to be accredited with TAF laboratory certification in the near future, so that the Department will be able to provide professional analysis of water and soil samples. Combining the characteristics of the two major centers, the Department can assist or collaborate with public and private companies in solving sewage sludge problems. Through active and relevant collaboration projects, our school can promote itself in the leading position of green technologies, creating a win-win scenario to solve environmental problems.



The application of sludge on grass land



Products by reusing sludge



## ● Professional Laboratories

In response to the teaching needs of the course, the Department has professional research laboratories to provide all the practical needs of all laboratory modules including soil and groundwater, environmental biotechnology, water quality control and monitoring, environmental microanalysis, air pollution/soil remediation, waste treatment, environment membrane, environment management and system analytical, waste recycling, soil environmental science and environmental toxicology.

## ● Faculty

Name	Position	Education	Specialties
Chang Chien, Shui-Wen	Professor	National Chung Hsing University, Soil and Environmental Sciences, PhD	Environmental pollutant monitoring, monitoring and remediation of soil and groundwater
Chang, Jih-Hsing	Professor	University of Delaware, Civil and Environmental Engineering, PhD	Soil and groundwater pollution, physicochemical treatment of wastewater, application of nanotechnology in wastewater treatment and monitoring
Cheng, Shu-Fen	Professor	National Taiwan University, Graduate institute of Environmental Engineering, PhD	Monitoring and remediation of soil and groundwater, waste management, environmental impact assessment, wastewater treatment
Yang, Hsi-Hsien	Professor	National Cheng Kung University, Environmental Engineering, PhD	Air pollution, environmental pollutant monitoring, aerosol technology, air toxicology
Lo, Huang-Mu	Professor	University of Southampton, Civil and Environmental Engineering, PhD	Environmental engineering and management, anaerobic digestion, water and soil resource conservation, energy technology
Lin, Hung-Yueh	Associate Professor	National Chiao Tung University, Environmental Engineering, PhD	Environmental system analysis, waste management, material recycling and recovery
Lin, Sheng-Lung	Associate Professor	Georgia Institute of Technology, Civil and Environmental Engineering, PhD	Environmental management system, life cycle assessment, energy engineering and management, green technology
Liu, Min-Hsin	Associate Professor	University of Missouri-Columbia, Civil and Environmental Engineering, PhD	Soil and groundwater remediation, Waste recovery technology
Wang, Wen-Yu	Associate Professor	National Taiwan University of Science and Technology, Chemical Engineering, PhD	Nano semiconductor photoelectric catalyst, advanced oxidation processes, waste-to-material recovery, environmental management system
Chang, Dyi-Huey	Assistant Professor	University of Cincinnati, Civil and Environmental Engineering, PhD	Environmental mathematical modeling, fuel cell
Ng, Ding-Quan	Assistant Professor	National University of Singapore, Civil and Environmental Engineering, PhD	Water chemistry, physical chemistry, analytical chemistry, water treatment and distribution



### Contact

Department of Environmental Engineering and Management:  
 Phone: +886-4-23323000# 7482,7483,7485,7489  
 Mail: dem@cyut.edu.tw  
 Buildings: G-615, Humanities and Technology Building.  
 Web site: <http://dem.cyut.edu.tw/>