ENVIRONMENTAL & WATER TECHNOLOGY COURSE MODULES (YEAR 3)

A growing world population and climate change are set to bring about the need to increase water supplies. Be at the frontline to combat environmental challenges when you join the Diploma in Environmental & Water Technology [EWT]. Jointly developed with PUB, Singapore's National Water Agency, this diploma will equip you with a firm grounding in the key areas of water technology, waste management and resource conservation, as well as pollution monitoring and control.

In your first year, you will be introduced to basic concepts of environmental science, engineering and technology with modules such as Noise Monitoring & Control, Computer Aided Design and Hydraulics. From the second year onwards, you will learn in- depth modules in various aspects of environmental engineering and water technology, such as air and water quality monitoring & control.

In your final year, you will work on an environmental innovation & research project and go on a four- month internship. You can opt for hands-on learning opportunities at our Centre of Innovation in Environmental and Water Technology [COI-EWT] and work alongside research engineers and scientists on industry-based projects. All EWT students have the chance to learn about sustainable environmental practices by participating in an enhanced study trip to destinations such as South Korea or Taiwan.

With additional Workforce Skills Qualification [WSQ] Certificates in Noise Monitoring, Industrial Noise Control and Risk Management, you can look forward to better job prospects in the industry.

LEVEL 3.1

Environmental Innovation & Research
In this module, students are expected to integrate the knowledge they have gained in the earlier semesters to undertake an environmental project on a related topic in the field of water, environmental science and technology.

Environmental Management Systems
In this module, students will learn the application of concepts and principles in environmental management. Topics covered include the fundamentals of environmental impact assessment (EIA), environmental baseline studies (EBS), environmental management systems (EMS), ISO 14001, ISO 50001, environmental auditing and renewable energy.

Industrial Wastewater & Membrane Technology
Characteristics of industrial wastewater vary with the industrial process. Treatment methodology adopted varies with the type of wastewater. Membrane applications are taking an edge as a treatment option. Topics that will be covered include unit processes and treatment technologies applicable to industrial wastewater treatment and specific industrial wastewater case studies. Students will be introduced to membrane science and applications in environmental engineering. Membrane applications in water reclamation, recycling and reuse including desalination technology will be taught. Case studies will be used to illustrate specific industrial applications.

Water Reclamation Technology
This module introduces students to sewage characteristics, sewer design and maintenance and unit operations in a conventional wastewater treatment plant. This module will also cover the fundamentals of sewage collection systems for domestic wastewater, wastewater treatment technologies, monitoring and operation of wastewater treatment systems and the code of practice relevant to sewerage and wastewater treatment. Students will also learn about sludge treatment and disposal technologies. Emerging technologies in water reclamation and water recycling will be emphasised.

Project ID: Connecting the Dots^
This module aims to prepare students for an increasingly globalized and interconnected world where problems are multi-faceted and require interdisciplinary research and collaboration to solve. Using a project-based learning approach, students will have the opportunity to work in a multi-disciplinary team to investigate and propose comprehensive recommendations for a pressing real-world problem affecting Singapore. They will be guided to step out of their disciplinary silos and effectively communicate and collaborate with peers from different backgrounds. Ultimately, the module seeks to develop independent learning skills and the ability to synthesize diverse strands of knowledge to solve a complex problem, while impressing on students the importance of being a responsible global citizen.

LEVEL 3.2

4-Month Internship
In this module, students will be attached to organisations for a period of four months. This is to prepare them for future employment in their particular discipline of study. During their internship, students will undertake projects and tasks assigned by the organisations. This allows them the opportunity to take initiative as well as to develop self-confidence, and interpersonal and adaptation skills.

Sustainable Environment Practices
This module covers the integration of sustainable practices in various aspects of the environment - namely air quality, water resources and quality, noise & waste management, resource efficiency, renewable energy, ecosystem restoration and heritage conservation, using a model eco-city. Students will have first-hand exposure to a practical and integrated approach to the implementation of the various solutions covered in previous modules.

COURSE CURRICULUM (YEAR 3)

Module Name	Credit Units
YEAR 3	
Level 3.1 (24.5 hours per week)	
Environmental Innovation & Research	8
Environmental Management System	3
Industrial Wastewater & Membrane Technology	5.5
Water Reclamation Technology	4
Project ID: Connecting the Dots ^	4
Level 3.2 (20 hours per week)	
4-Month Internship	16
Sustainable Environment Practices	4

Notes:
^ For more details on Interdisciplinary Studies (IS) electives, please log on to www.np.edu.sg/is/

IS Modules
The School of Interdisciplinary Studies (IS) delivers a broad-based curriculum, which nurtures a new generation of professionals with multidisciplinary skills and an innovative and entrepreneurial spirit to meet the challenges of a knowledge economy. IS offers both prescribed modules and electives to challenge boundaries. Prescribed modules develop students' competencies in core areas such as Communication, Innovation and Enterprise, Culture and Communication, and Personal Mastery and Development, while elective modules provide insights into Arts and Humanities, Business, Design, and Science and Technology.