School of Life Sciences & Chemical Technology

- Common Science Programme
- Biomedical Science Revamped
- Pharmaceutical Science
- Landscape Design & Horticulture
- Chemical & Biomolecular Engineering
- Environmental & Water Technology



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- **30** Environmental & Water Technology (N74)



Re-code Your DNA

Imagine a future where your curiosity fuels groundbreaking discoveries. At the School of Life Sciences & Chemical Technology (LSCT), we ignite your passion for science. Whether your passion lies in driving medical breakthroughs or crafting sustainable solutions, you'll be empowered to make a significant impact across diverse fields. Your journey to unravel life's mysteries begins here.

5 Future-Ready Diplomas + 1 Common Science Programme

Find us online at www.np.edu.sg/lsct

Life Sciences

Common Science Programme (N15)

- Gateway to two reputable diplomas Biomedical Science and Pharmaceutical Science
- Make an informed course choice at the end of the first semester with our unique Diploma Exposure Programme

Diploma in Biomedical Science (N59) Revamped

- An established programme that prepares you for further studies and careers in medicine, biomedical research, allied healthcare, medtech or biotechnology
- Specialise in one of three tracks: Medical Bioscience, Clinical Laboratory Science, or the Integrated Clinical Training Programme New

Diploma in Pharmaceutical Science (N73)

- Unique curriculum that integrates clinical pharmacy and pharmaceutical science applications to give you an edge in further studies and work
- Choice of two elective options: Complementary Medicine & Traditional Chinese Medicine or Nutrition & Dietetic Science

Chemical & Environmental Technology

Diploma in Chemical & Biomolecular Engineering (N56)

- Be prepared for a diverse range of careers in sectors such as biopharmaceutical, petrochemical, semiconductor, energy, and sustainability
- Learn in immersive learning facilities including an automated pilot plant and simulation laboratory
- Embark on internships, industry mentorships and capstone projects with MNCs such as GSK, Lonza, Pfizer, ExxonMobil, Shell, Merck, and Air Liquide

Diploma in Environmental & Water Technology (N74)

- Pursue green careers in water and environmental sustainability to support the Singapore Green Plan 2030 and ZeroWaste Masterplan
- Established course co-developed with PUB, Singapore's National Water Agency, and supported by NP's award-winning Centre for Environmental Sustainability
- Apply for a bond-free PUB Diploma Scholarship that comes with internship placement

Horticulture & Landscape Diploma in Landscape Design & Horticulture (N57)

- One-of-a-kind diploma that combines training in landscape design, plant science and horticulture
- Experience learning in outdoor settings such as Singapore Botanic Gardens, Clementi Woods Park, and nature reserves
- Strong multidisciplinary foundation opens doors to more options, including careers in the sustainability sector



Why Choose LSCT

Ready For The Future

Dive into the future with hands-on experience in cutting-edge technologies like 3D printing, the Internet of Things, and virtual reality. Gain the skills you need to thrive in the fast-evolving life science and chemical industries.

Top Lecturers

You're in good hands here! Guided by experienced lecturers with rich research backgrounds and advanced gualifications, you'll enjoy a fulfilling learning experience.

Proven Track Record

Our graduates have made it to top universities around the world and clinched prestigious scholarships. To date, 47 LSCT graduates have entered local medical schools!

Exciting Prospects

We prepare you for further studies or careers in the growing areas of healthcare, pharmaceuticals, urban farming, sustainability and water production, with our expertise in:

- Agritech and Aquaculture
- Biocatalysis and Fermentation
- Biopharmaceuticals
- Cancer biology

- Food technology • Molecular diagnostics
- Membrane technology
- Sky-rise greening



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Industry-Relevant Learning

Work with the industry's best through capstone projects, internships, and off-campus classes. LSCT has close links with key players such as A*STAR, Lonza, NHG Pharmacy, Pfizer, Singapore General Hospital, National Parks Board and PUB, Singapore's National Water Agency.





Pair Your Diploma with THAT SOMETHING XTRA

Take 1 or 2 Learning Units in an area that piques your interest. Or complete 3 Learning Units to get a Minor.



Because you get to:

Try out something interesting.

- Gain additional skills outside of your course.
- Graduate with Xtra gualifications: Diploma + Minor.
- Take charge of your own learning and enjoy the journey.

The choice is yours. Our **Personalised Learning Pathway** (PLP) lets you choose what you'd like to learn from 4 different pathways and more than 50 Learning Units (LUs).

Mix and match your LUs or take up 3 specific LUs to earn a Minor. Go on an overseas trip or attend a masterclass. Discover fun, freedom and fulfillment when you personalise your learning with PLP!

To check out the wide range of interesting LUs, visit www.np.edu.sq/plp or scan the QR code here



Personalise Your Learning with 4 Exciting Pathways & 12 Minors



PROFESSIONAL

Minor In

SKILLS PATHWAY



Minor In

 Applied Psychology Entrepreneurship

- Cybersecurity
- Data Analytics & Al
- Social Media Marketing
- User Experience Design
- Robotics & Innovation New



Global Readiness

Minor In



Minor In • Foreign Languages

- Sustainable Care New Environmental
- Sustainability Social Leadership

School of Life Sciences & Chemical Technology 5

N15



Get latest updates o course

Common Science Programme



- Gateway to two reputable diplomas Biomedical Science and Pharmaceutical Science
- Gain **industry-relevant skills** to explore a career in the pharmaceutical or biopharmaceutical fields
- Through exciting experiential learning activities and industry exposure opportunities, our unique **Diploma Exposure Programme** will help you make an informed course choice at the end of the first semester

WHAT THE COURSE IS ABOUT

Interested in science and healthcare, but not sure which route to take? Choose our Common Science Programme (CSP) to gain a deeper understanding of the biomedical and pharmaceutical sectors in your first semester.

Through curated experiences – such as insightful foundation modules and industry visits – you will discover your interests and the exciting career possibilities in these sectors. This will help you make an informed decision on which diploma suits you.

You will take foundational modules in cell biology and genetics, inorganic and physical chemistry, as well as biosafety and biosecurity practices.

In addition, you will earn the bizSAFE Level 2 Certification in essential workplace safety. Also, look forward to workshops with hands-on learning, complemented by interactive e-learning activities in the Diploma Exposure Programme.

What's more, our Career & Professional Preparation module will help you discover your strengths and career goals. At the end of this foundation semester, choose either the Biomedical Science or Pharmaceutical Science diploma – both of which will open doors to rewarding career pathways!



COMMON SCIENCE PROGRAMME Take foundation modules across different disciplines in Semester 1 to help you discover your strengths and interests

Choose one of our two popular diplomas at the end of Semester 1

Diploma in Biomedical Science (BMS)

> Get the training and industry exposure to explore a career in the biotechnology, medical or healthcare fields

Diploma in Pharmaceutical Science (PHARM)



Gain skills and expertise in clinical pharmacy and pharmaceutical science applications for a career in healthcare and applied science

WHAT YOU WILL LEARN

YEAR 1

- Biosafety & Risk Management
- Cell Biology & Genetics
- Inorganic & Physical Chemistry
- Mathematics
- Career & Professional Preparation 1
- Health & Wellness[^]
- Innovation Made Possible[^]
- Confident Communication: Find Your Voice (VOICE)^
- English Language Express^{**}

You will select your preferred diploma towards the end of your first semester. Refer to the module listing in the respective diploma pages for more details:

- Biomedical Science (pg 9)
- Pharmaceutical Science (pg 15)

YEAR 2

- Modules under the LSCT diploma you major in
- World Issues: A Singapore Perspective^

YEAR 3

- Modules under the LSCT diploma you major in

- Project ID: Connecting the Dots^

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

Refer to the Further Studies section on the respective diploma pages.

CAREER

Refer to the Career section on the respective diploma pages.

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

| Subject | 'O' level Grade |
|---|--------------------|
| English Language | 1-7 |
| Additional Mathematics/Mathematics | 1-6 |
| Any one of the following subjects: Biology Biotechnology Chemistry | 1-6 |
| Food & Nutrition/Nutrition & Food Scien Physics | ice |
| Science (Chemistry, Biology) | |
| Science (Physics, Biology) | |
| Science (Physics, Chemistry) | |

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at www.np.edu.sg/docs/ELR2B2.pdf.

Candidates with colour vision deficiency may encounter difficulties meeting the course requirements and expectations.

CONTACT US

For the most up-to-date information on NP's Common Science Programme, log on to **www.np.edu.sg/csp**

N59



Diploma in Biomedical Science Revamped



- An established biomedical science programme that prepares you for **further studies and careers** in medicine, biomedical research, allied healthcare, data analytics, medtech, and biotechnology
- Specialise in one of three unique tracks to enhance your career prospects: Medical Bioscience, Clinical Laboratory Science, or the Integrated Clinical Training Programme
- Opportunities to work on capstone projects with renowned establishments such as National Cancer Centre Singapore or go on a one-year integrated training programme with Singapore General Hospital

WHAT THE COURSE IS ABOUT

Curious about how the human body works? Dreamt of making groundbreaking discoveries in medical science? Our Diploma in Biomedical Science (BMS) offers a comprehensive curriculum that equips you with a strong foundation in both theoretical knowledge and practical skills that prepare you for a range of careers in healthcare, research, and biotechnology.

With hands-on training and real-world exposure through internships and laboratory work, you will get a head start when you enter the workforce as competent biomedical science professionals.

Additionally, the curriculum builds a solid academic foundation, enabling you to pursue higher education, including degrees in medicine, dentistry, chemistry, life sciences, biological sciences, and more.

Building a Strong Foundation

In the BMS programme, you will establish a solid foundation across multiple disciplines critical to the understanding of human health and disease. You will gain in-depth knowledge of cell and molecular biology, human anatomy and physiology, and biochemical processes within living organisms including disease mechanisms, as well as immune system responses. You will also be trained in essential laboratory techniques, research methodologies, and data analytical skills.

Additionally, you will gain cutting-edge skills in programming, artificial intelligence, and Internet of Things – key areas of growth in biotechnology, medtech, and healthcare.

DESIGN YOUR LEARNING

In your second year, you can choose one of three unique tracks to deepen your skills and knowledge in a specialised area:

1 DIPLOMA, 3 SPECIALISED TRACKS

Medical Bioscience Track

If you're passionate about biotechnology, which involves harnessing biological processes and organisms to create therapeutic products, or in medical technology, which focuses on developing devices for disease detection, monitoring, and treatment, this track is perfect for you. Through this track, you will gain the knowledge to:

- Identify disease-related biological targets including proteins, genes, antibodies, and cells
- Produce biotherapeutics such as antibodies, hormones, vaccines, and cell-based therapies
- Develop functional foods designed to prevent or manage specific health conditions
- Develop and advance tools for accurate early disease detection and diagnosis

You will gain hands-on experience through a capstone project with industry partners like **Thermo Fisher Scientific** and the **National Cancer Centre Singapore**.

Clinical Laboratory Science Track

This track dives into diagnostic testing, and offers a deep understanding of clinical haematology and clinical chemistry, crucial for diagnosing conditions such as anaemia, leukaemia, and clotting disorders. You will learn how to:

- Measure glucose, electrolytes, hormones, and drugs to diagnose disease and monitor treatments
- Manage and analyse clinical data
- Gain insights from clinical trials to understand the process of testing and approving new medical treatments

You will have the opportunity to work on a capstone project or go on an internship with organisations such as **Changi General Hospital** and **NUH**.

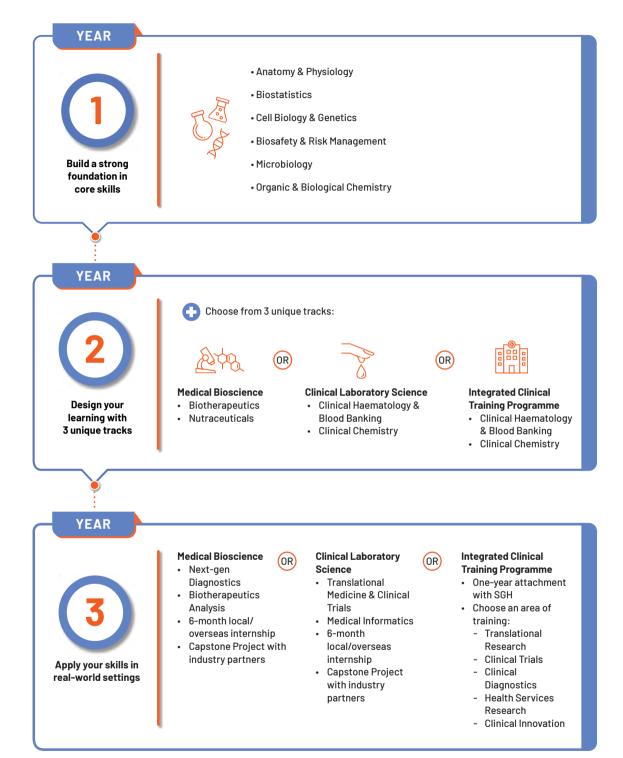
Integrated Clinical Training Programme Track

In this track, you will get to participate in a one-year Integrated Clinical Training Programme at **Singapore General Hospital**, where you will work alongside doctors and researchers to conduct research and solve realworld problems in a hospital environment.

You can choose to focus on one of the following areas:

- Translational researchClinical trials
- Clinical diagnostics
- Heath services research (Data analytics)
- Clinical Innovation (Prototyping medical devices)





School of Life Sciences & Chemical Technology 11

WHAT YOU WILL LEARN

YEAR 1

- Anatomy & Physiology
- Cell Biology & Genetics
- Microbiology
- Organic & Biological Chemistry
- Inorganic & Physical Chemistry
- Biosafety & Risk Management
- Biostatistics
- Mathematics
- Career & Professional Preparation 1
- Health & Wellness^
- Innovation Made Possible^
- Confident Communication: Find Your Voice (VOICE)^
- English Language Express^{^*}

YEAR 2

- Analytical Chemistry

- Applied Microbiology
- Applied Biostatistics
- Biochemistry
- Cell Culture & Tissue Applications
- Immunology
- Molecular Biology & Bioinformatics
- Career & Professional Preparation 2
- World Issues: A Singapore Perspective^

Choose one of three options: Medical Bioscience

- Biotherapeutics
- Nutraceuticals

Clinical Laboratory Science

- Clinical Haematology & Blood Banking
- Clinical Chemistry

Integrated Clinical Training Programme

- Clinical Haematology & Blood Banking
- Clinical Chemistry



YEAR 3

Medical Bioscience

- Next Generation Diagnostics
- Biotherapeutics Analysis
- Capstone Project OR
- Multidisciplinary Capstone*
- Six-month Internship (Local/Overseas)
- Project ID: Connecting the Dots^

Clinical Laboratory Science

- Translational Medicine & Clinical Trials
- Medical Informatics
- Capstone Project
- Six-month Internship (Local/Overseas)
- Project ID: Connecting the Dots[^]

Integrated Clinical Training Programme

- Integrative Module 1 & 2
- Project ID: Connecting the Dots^



^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and selfdirected learners, ready for the future workplace.

* The Multidisciplinary Capstone is a 12 credit-unit module designed to build cross-disciplinary knowledge and skills by developing a solution to an industry challenge. Students will be exempted from Project ID: Connecting the Dots and Capstone modules.

^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

As a BMS graduate, you can pursue a wide range of degree programmes across both science and nonscience fields, including psychology, architecture, social sciences, business, and business administration Additionally, you have opportunities to advance in specialised areas such as:



- Dentistry
- Medical Laboratory Science Allied Healthcare

Science & Research

- Bioengineering
- Chemistry
- Data Analytics
- Medical Technology

More than **80%** of our graduates go on to National University of Singapore, Nanyang Technological University, Singapore Management University, Singapore Institute of Technology and Singapore University of Social Sciences every year. Top overseas universities also welcome our graduates with generous module exemptions. These include:

Australia

- Australian National University
- Murdoch University
- Queensland University of Technology
- RMIT University
- The University of Adelaide
- The University of Melbourne
- The University of Queensland
- The University of Sydney
- The University of Western Australia
- University of New South Wales
- University of Technology Sydney

New Zealand

- The University of Auckland

United Kingdom

- Queen's University Belfast
- University of Dundee
- University of Leeds
- University of Liverpool
- The University of Edinburgh
- The University of Manchester



Zhuo Zheng Wong Class of 2023

Pursuing a degree in Data Science & Analytics at NUS







Cheng Mei Lin Class of 2024 Pursuing a degree in Dentistry at NUS



ASPIRING CARDIOLOGIST Gautam was among the first batch of

students to embark on LSCT's exclusive

exposure to translational research. data

I am grateful for the hands-on learning

experiences that opened pathways for

me to pursue medicine and become a

K.S. GAUTAM

Class of 2024

"The Integrated Clinical Training Programme

School of Life Sciences & Chemical Technology 13

Programme that gave him real-world

CAREER

With your versatile BMS diploma, you will have a wide range of career options:

- Assistant Biotechnologist
- Assistant Clinical Innovation Engineer
- Assistant Data Analyst
- Clinical Trial Assistant
- Laboratory Analyst
- Laboratory Technologist
- Medical Laboratory Scientist
- Medical Technologist
- Quality Assurance Executive
- Quality Control Analyst
- Research Assistant
- Research Technologist

- Sales & Marketing Executive



Dr Natasha Haveman Class of 2005

Project Scientist at National Aeronautics and Space Administration (NASA)



Sylvia Chiang Class of 2007

Clinical Operations Manager at IQVIA, a multinational health technology company



Summer Li Class of 2021

After graduating from Imperial College with First Class Honours, the recipient of the prestigious A*STAR National Science Scholarship will be pursuing a doctorate degree in neuroscience

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

| Subject | 'O' leve Grade |
|---|-------------------|
| English Language | 1-7 |
| Additional Mathematics/Mathematics | 1-6 |
| Any one of the following subjects: Biology Biotechnology Chemistry Food & Nutrition/Nutrition & Food Scien Physics Science (Chemistry, Biology) Science (Physics, Biology) Science (Physics, Chemistry) | 1-6 nce |

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at **www.np.edu.sg/docs/ELR2B2.pdf**. For students with other qualifications, please refer to the NP

website for the entry requirements and admissions exercise period.

CONTACT US

For the most up-to-date information on NP's Diploma in Biomedical Science, log on to **www.np.edu.sg/bms**

N73



Diploma in **Pharmaceutical Science**



- Unique curriculum integrates clinical pharmacy and pharmaceutical science applications to give you an edge in future careers and degrees in medical, healthcare and drug development fields
- Explore new possibilities in drug and treatment development with two elective options: Complementary Medicine & Traditional Chinese Medicine or Nutrition & Dietetic Science
- Gain future-ready skills in healthcare innovations to transform pharmaceutical practices and operations through internships and capstone projects

WHAT THE COURSE IS ABOUT

Discover the exciting world of clinical pharmacy and drug discovery & development with the Diploma in Pharmaceutical Science (PHARM). With Singapore's status as a leading hub for healthcare and pharmaceutical manufacturing & research, explore bright career prospects in these cutting-edge fields!

Build Your Knowledge

Build a solid foundation in biological, chemical and pharmaceutical sciences. Dive into topics such as:

- Human anatomy & pathology
- Mechanisms of drug action
- Drug discovery & design
- Pharmaceutical biotechnology

In addition, you will learn dispensing skills, essential lab techniques for formulating and analysing pharmaceutical products, as well as best practices in the industry.

Get Future-ready

Prepare for the fast-evolving pharmaceutical world by learning new technologies such as 3D printing, prototyping skills, health informatics, automation, and AI in pharmacy.

PHARM will keep you up-to-date on emerging trends in pharmaceuticals and life sciences. Its focus on biotechnologies used in discovering pharmaceutical drugs and biologics will diversify your skills and expand your career options.

Hands-on Experience

Learn on-site at community and hospital pharmacies such as National Healthcare Group polyclinics and Singapore General Hospital, or with global pharmaceutical companies like Lonza and Alcon. Over six months, apply your knowledge in real-world settings and develop valuable professional experience and networks!

Enriching Electives

You can take electives to enhance your skills and career prospects. Choose Complementary Medicine & Traditional Chinese Medicine to evaluate alternative therapies and traditional Chinese medicines, or Nutrition & Dietetic Science to explore the impact of nutrients, supplements, and weight management on health.



DYNAMIC INTERNSHIP EXPERIENCES

"During my internship at Alcon, I was responsible for managing quality records and contributed to projects aimed at automating daily quality assurance workflows. This experience has strengthened my teamwork, communication, and technical skills. I'm grateful for the opportunity to be part of Alcon and for the support I received throughout my internship."

Kwek Zong Ming (first from right) Final-year PHARM student

Partnerships

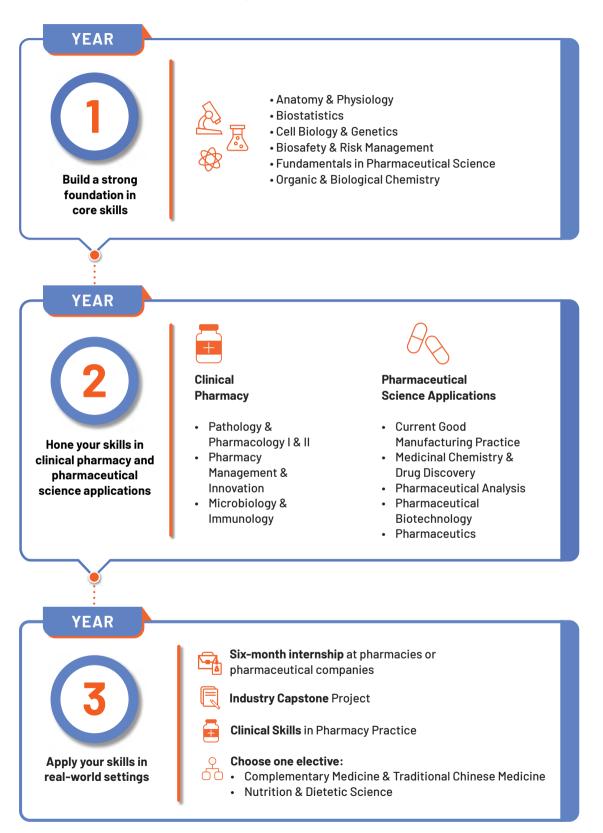








OVERVIEW OF YOUR PHARM JOURNEY



WHAT YOU WILL LEARN

YEAR 1

- Anatomy & Physiology
- Biosafety & Risk Management
- Biostatistics
- Cell Biology & Genetics - Fundamentals In Pharmaceutical
- Science
- Inorganic & Physical Chemistry
- Organic & Biological Chemistry
- Mathematics
- Career & Professional Preparation 1
- Health & Wellness^
- Innovation Made Possible^
- Confident Communication: Find Your Voice (VOICE)^
- English Language Express^{^*}

YEAR 2

- Applied Biostatistics
- Medicinal Chemistry & Drug Discovery
- Microbiology & Immunology
- Pharmaceutical Biotechnology
- Pathology & Pharmacology I & II
- Pharmaceutical Analysis
- Pharmaceutics
- Pharmacy Management & Innovation
- Current Good Manufacturing Practice
- Career & Professional Preparation 2
- World Issues: A Singapore Perspective^

YEAR 3

- Clinical Skills in Pharmacy Practice
- Industry Capstone Project
- Any one elective module:
- Complementary Medicine & Traditional Chinese Medicine • Nutrition & Dietetic Science
- Internship
- Project ID: Connecting the Dots^



^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

As a PHARM graduate, you can apply for the Bachelor of Pharmacy (Honours) and Bachelor of Science (Pharmaceutical Science) at NUS, as well as related degrees in allied health, biological science, chemistry, life sciences, dentistry, and medicine. You can also pursue other degrees in areas like the arts, architecture, business, education, psychology, and social sciences offered by local universities.

You may enjoy exemption when applying for related degree programmes at overseas universities, including: Australia

- Monash University
- Queensland University of Technology
- RMIT University
- The University of Melbourne
- The University of Queensland
- The University of Sydney
- The University of Western Australia

New Zealand

- The University of Auckland
- University of Otago





Class of 2022 Pursuing Medicine at the NUS Yong Loo Lin School of Medicine

Pursuing a degree in Pharmacy at NUS

CAREER

Your PHARM diploma will open doors to many careers, including:

Nicolette Koh

Class of 2022

Claudia Heng

- Pharmacy Technician
- Laboratory/Research Technologist
- Quality Assurance/Control Analyst
- Clinical Trial Associate/Coordinator
- Healthcare Product Executive
- Patient Services Associate
- Pharmacy Sales Executive
- Regulatory Executive



Joyce Nai Class of 2015 Pharmacist at Unity Pharmacy



Venice Tan Class of 2023 Pharmacy Technician at the National Centre for Infectious Diseases

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

| Subject | 'O' level Grade |
|--|--------------------|
| English Language | 1-7 |
| Additional Mathematics/Mathematics | 1-6 |
| Any one of the following subjects: Biology Biotechnology Chemistry Food & Nutrition/Nutrition & Food Scient Physics | 1-6 ce |
| Science (Chemistry, Biology) Science (Physics, Biology) Science (Physics, Chemistry) | |

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at www.np.edu.sg/docs/ELR2B2.pdf.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period. Candidates with colour vision deficiency may encounter difficulties meeting the course requirements and expectations.

CONTACT US

For the most up-to-date information on NP's Diploma in Pharmaceutical Science, log on to www.np.edu.sg/pharm

N57



Diploma in **Landscape Design** & Horticulture



- One-of-a-kind diploma that combines training in landscape design, plant science and horticulture to prepare you for exciting roles in transforming Singapore's
- Immersive learning at outdoor settings such as Singapore Botanic Gardens, Clementi Woods Park and nature reserves
- Learn the latest industry practices and technologies through a curriculum jointly developed, delivered, and assessed by industry, including the National Parks Board
- Build a strong multidisciplinary foundation to widen career options in sustainability-related fields such as horticulture, environmental science, landscape architecture and urban agriculture

WHAT THE COURSE IS ABOUT

Want to be the creative drive behind Singapore's garden city or help build a sustainable and green future? If you love nature and have a flair for design, the Diploma in Landscape Design & Horticulture (LDH) will put you on the right track to develop and enrich Singapore's green spaces.

Combining landscape design, plant science and horticulture management, LDH is the only diplomalevel course of its kind in Singapore. Thanks to our strong partnership with the National Parks Board, you can look forward to practical training at the Greenhub in Clementi Woods Park, Singapore Botanic Gardens, and other national parks and gardens.

Hands-on Learning

You will develop skills in landscape design, urban ecology, conservation, and plant taxonomy. As you progress, you will study plant physiology, breeding, arboriculture, urban horticulture technology, and softscape design.

At our smart greenhouse facility, you will learn about urban agriculture and optimising crop growth using real-time data from smart sensors. Enjoy experiential learning outside of the classroom? You'll get to be involved in tree planting or the removal of invasive plant species at Pulau Ubin and nature reserves around Singapore.

Real-world Application

LDH will hone your project management skills at the various parks and project sites in Singapore, where you can help to design guided tours, therapeutic gardens, and biophilic play areas. You may also create prototypes of hydroponics and aquaponics systems, and investigate growth parameters for edible crops!

Industry-relevant Training

Our curriculum, jointly developed with industry partners, lets you tap into the expertise of companies that specialise in diverse areas ranging from smart landscaping technology, sustainable water management, and biodiversity impact assessments.

Partnerships





Graduates aiming to become certified arborists will receive exemptions for selected exam pre-requisites in the International Society of Arboriculture Certified Arborist Preparatory Programme.

Deepen Your Skills

In your final year, you can choose to work on a capstone project in Plant Science & Horticulture or Landscape Design, in collaboration with industry partners.

You can even deepen your learning by interning at a company specialising in the same domain area. With our renowned partner organisations such as Gardens by the Bay, Sentosa Golf Club, Singapore Botanic Gardens, Sungei Buloh Wetland Reserve, Pulau Ubin, Changi Airport, and Mandai Wildlife Reserve, you can look forward to an internship that will sharpen your skill sets!



DRAGON IN BLOOM

Putting their creativity and skills to good bottom right) and Lai Shu Zhen (third a dragon-like display at the new Floral Garden at the revamped Japanese Garden as part of an invitation from the National Parks Board.



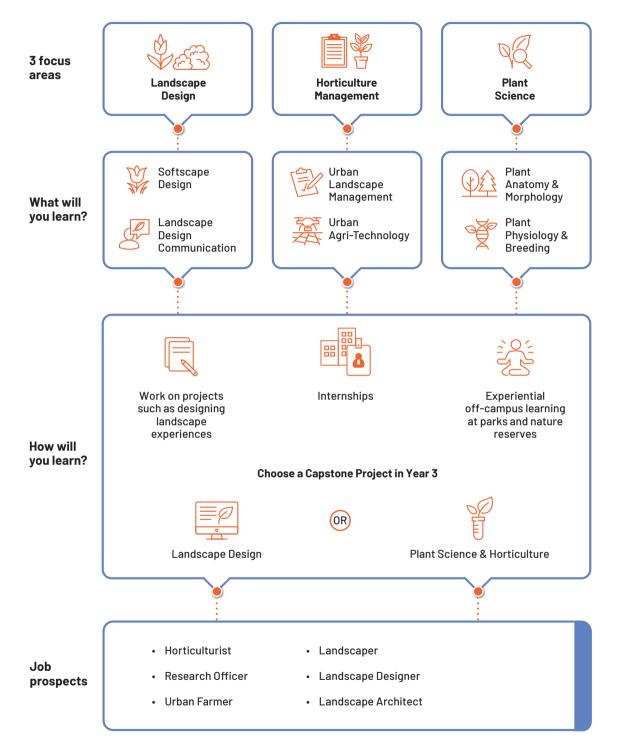




sentesa



OVERVIEW OF YOUR LDH JOURNEY



WHAT YOU WILL LEARN



^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

You can apply for courses in fields such as architecture, landscape architecture, business, science and social sciences at local universities.

You may pursue a related degree course (such as architecture, landscape architecture, business, horticulture, plant science, botany and arboriculture) at overseas universities with module exemptions. These include:

Australia

- Australian National University
- Monash University
- The University of Adelaide
- The University of Melbourne
- The University of Queensland
- The University of Sydney
- The University of Western Australia
- University of New South Wales

New Zealand

- Lincoln University

United States

- University of Georgia

You can enrol in many relevant certification courses that are offered by the Centre for Urban Greenery and Ecology to further develop your expertise in the landscape industry. You can also stay updated on industry practices through programmes by the National Parks Board and the Singapore Institute of Landscape Architects.



Emelia Quek

Class of 2022 Pursuing a Bachelor's degree in Environmental Earth Systems Science at NTU

CAREER

Put your green thumbs to work at the two integrated resorts, three waterfront gardens at Marina Bay, country clubs, hotels and property developments across Singapore. The LDH course will open doors to exciting careers such as:

- Arboriculture Supervisor
- Horticulturist
- Horticulture Product Specialist
- Park Officer
- Lab Technologist
- Landscaper
- Landscape Designer
- Landscape Project Coordinator
- Landscape Supervisor
- Nursery Supervisor
- Research Officer
- Turfgrass Specialist
- Urban Farmer



Class of 2016 Assistant Project Manager and certified arborist at Mao Sheng Quanji Construction

> 'O' level Grade

ENTRY REQUIREMENTS

Pte Ltd

Aggregate Type ELR2B2-D

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

Subject

| English Language | 1-7 |
|------------------------------------|-----|
| Additional Mathematics/Mathematics | 1-7 |
| Any one of the 2nd group of | 1-6 |
| Relevant Subjects for the | |
| ELR2B2-D Aggregate Type | |

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-D Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at www.np.edu.sg/docs/ELR2B2.pdf.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

CONTACT US

For the most up-to-date information on NP's Diploma in Landscape Design & Horticulture, log on to **www.np.edu.sg/ldh**

N56



Diploma in Chemical & Biomolecular Engineering



- Be prepared for a diverse range of careers in sectors such as biopharmaceutical, petrochemical, semiconductor, energy & sustainability, and exciting further study opportunities
- Learn the latest technologies in **immersive learning facilities** including customdesigned automated pilot plant and simulation laboratory
- Gain real-world experience through internships, industry mentorships and capstone projects with MNCs such as GSK, Lonza, Pfizer, ExxonMobil, Shell, Merck and Air Liquide

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WHAT THE COURSE IS ABOUT

A broad-based course that integrates biological and chemical sciences with engineering concepts, the Diploma in Chemical & Biomolecular Engineering (CBE) prepares you for careers in diverse industries, including energy, chemical, biopharmaceuticals, biotechnology, environment, semiconductors, and manufacturing.

Strong Broad-based Foundation

CBE covers essential concepts in chemical engineering through modules such as Chemical & Biomolecular Engineering Principles, Inorganic & Physical Chemistry, Organic & Biological Chemistry, and Thermodynamics.

You'll explore the application of scientific concepts in operating engineering systems and equipment. This includes in-depth study of biopharmaceutical technology, chemical engineering transfer technologies, analytical chemistry, as well as the role of the chemical engineer in addressing environmental pollution.

Get Future-ready with Green and Digital Skills

The course enhances critical thinking and problemsolving skills that are crucial for future chemical and biomolecular engineers. Sustainability concepts are integrated into the curriculum, equipping you to develop solutions for real-world challenges. You will also gain skills in data analytics, simulation software, and process optimisation through handson experiences with automated pilot plants and simulated refineries in IT-enabled facilities. These skills will prepare you for careers in the dynamic biopharmaceutical and semiconductor manufacturing industries.

Customise Your Learning

In your final year, choose from two tracks that will get you ready for exciting high-growth industries:

- Sustainable Energy & Chemistry: This track focuses on skills in chemical engineering and environmental management. Your capstone project – supervised by industry professionals – will give you insights into sustainable energy production and green chemistry.
- **Biopharmaceutical:** Explore modules that delve into biopharmaceutical processes such as cell culture and the purification of biological products. Gain expertise in biopharmaceutical manufacturing, process optimisation, and quality control to prepare you for careers with global biopharmaceutical manufacturing companies.

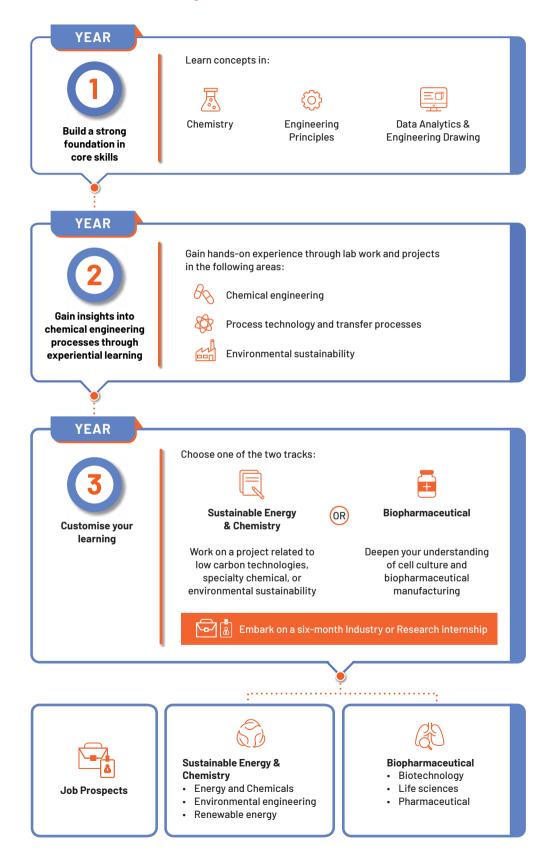
Industry-relevant Training

Benefit from our strong industry connections with modules that are co-developed and co-delivered with leading partners such as Air Liquide. Learn from experts through lab work, projects and internships, and stay updated on sustainable industry practices, process design, and biopharmaceutical analysis.

Apply your skills by choosing either of these options:

- Industry Internship: Work with companies such as Air Liquide, Merck, ExxonMobil, Evonik, GSK, Pfizer and Lonza.
- **Research Internship:** Conduct research at local facilities such as A*STAR, or an overseas research institution.

OVERVIEW OF YOUR CBE JOURNEY



Partnerships









WHAT YOU WILL LEARN



YEAR 1

- Chemical & Biomolecular Engineering Principles
- Data Analytics and Engineering Drawing - Engineering Mathematics
- 1&2
- Organic & Biological Chemistry
- Inorganic & Physical Chemistry
- Thermodynamics
- Career & Professional Preparation 1
- Health & Wellness^
- Innovation Made Possible[^] - Confident Communication:
- Find Your Voice (VOICE)^
- English Language Express^{^*}

- Analysis of Chemical Engineering Processes

YEAR 2

- Analytical Chemistry
- Chemical & Biological Reaction Engineering
- Environment, Health & Safety
- Process Technology Operations
- Reaction & Flow Laboratory
- Sustainable Industry Practices
- Transfer Process & Environmental Laboratory
- Transfer Processes: Fluid Flow
- Transfer Processes: Heat &
- Mass - Career & Professional
- Preparation 2 - World Issues: A Singapore
- Perspective^

YEAR 3

- Process & Automation Laboratory
- Sustainable Process Design
- Separation Technology
- Six-month Industry or Research Internship
- Project ID: Connecting the Dots^

Choose one of two options: Sustainable Energy &

Chemistry

- Capstone Project

Biopharmaceutical

- Biopharmaceutical Analysis
- Biopharmaceutical Manufacturing

^ Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.

FURTHER STUDIES

You can pursue a wide range of degrees offered by local universities. These include degree courses in chemical and biomolecular engineering, chemical engineering, environmental engineering, material sciences, physics, chemistry and biological sciences.

You may enjoy module exemptions when you apply for related degree programmes at overseas universities, includina:

> Tan Bing Qian Class of 2020

lovin Han

Class of 2024

Australia

- The University of Adelaide
- The University of Melbourne
- The University of Oueensland
- The University of Western Australia
- University of New South Wales

United Kingdom

- Imperial College
- Newcastle University
- The University of Manchester





Pursuing a degree in Chemistry and Biological Chemistry with a second major in Food Science at NTU

Pursuing a Chemical & Biomolecular

Engineering degree at NTU

CAREER

The CBE course provides you with a strong foundation and the flexibility to enter a wide range of industries, including:

- Chemical and Petrochemical
- Biochemical and Biotechnology
- Biomedical and Pharmaceutical
- Food & Beverage
- Electronics
- Environment, Health & Safety

You can look forward to rewarding career options such as:

- Assistant Biotechnologist
- Laboratory Technician/Technologist/Analyst
- Process Technician
- Quality Assurance Assistant
- Quality Control Assistant







Khairul Svahmi Class of 2015 Process Integration Engineer at Micron Technology

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C

To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

| Subject | 'O' level Grade |
|---|--------------------|
| English Language | 1-7 |
| Additional Mathematics/Mathematics | 1-6 |
| Any one of following subjects: Biology Biotechnology Chemistry Computing/Computer Studies Design & Technology | 1-6 |
| Electronics/Fundamentals of Electronic Physics Science (Chemistry, Biology) Science (Physics, Biology) Science (Physics, Chemistry) | S |

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at www.np.edu.sg/docs/ELR2B2.pdf.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

CONTACT US

For the most up-to-date information on NP's Diploma in Chemical & Biomolecular Engineering, log on to www.np.edu.sg/cbe

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Get latest updates c course

Diploma in Environmental & Water Technology



- **Pursue green careers** in water and environmental sustainability and join the growing community of changemakers supporting the Singapore Green Plan 2030 and ZeroWaste Masterplan
- An established course **co-developed with PUB, Singapore's National Water Agency**, and supported by NP's award-winning Centre for Environmental Sustainability
- Apply for a **bond-free PUB Diploma Scholarship** which includes an internship placement and a chance to vie for the prestigious Singapore Sustainability Scholarship

WHAT THE COURSE IS ABOUT

As Singapore embarks on green initiatives under the Singapore Green Plan 2030, new sustainability initiatives will change the way people work, study and play. Join our Diploma in Environmental & Water Technology (EWT) to lead in developing sustainable environmental solutions!

Strong Sustainability Focus

EWT provides a robust foundation in environmental science and engineering, covering:

- Sustainable water management
- Resource management and circularity
- Environmental sustainability
- Environmental management and pollution control

This strong foundation prepares you for further studies and career opportunities in the growing sustainability sector.

You can score a bond-free PUB scholarship, which includes an internship placement, and a chance to vie for the prestigious Singapore Sustainability Scholarship. Alternatively, the NEA-Industry Scholarship offers a \$15,000 annual study award and employment with the corporate sponsor.

Industry-relevant Training

Gain practical skills through field trips and learning journeys to Bishan-Ang Mo Kio Park, NEWater treatment plant and Sustainable Singapore Gallery.

In your final year, enhance your skills through a capstone project addressing real-world problems and a six-month internship with organisations such as PUB, Singapore's National Water Agency, Sembcorp, Xylem Water Solutions, and Marchwood Laboratory Services. Additional opportunities include working with NP's Centre for Environmental Sustainability (CfES) on green solutions, cutting-edge innovations in energy efficiency, waste valorisation, and circular economy solutions. Students may also choose to pursue a vacation internship with CfES to further hone their knowledge and skills during semester breaks.

MARCHWOOD

Equipped for the Digital Future

Explore technologies such as Internet of Things (IoT), artificial intelligence, and machine learning, and their applications in environmental processes. Engage in environmental analytics and learn to deploy IoT. You will apply your knowledge in multidisciplinary projects and hands-on activities, including operating drones for environmental monitoring.

Competitions and Professional Certifications

Enhance your portfolio by participating in competitions such as the WorldSkills Competition, PUB Splash Lab Competition, Xylem Global Student Innovation Challenge and Sembcorp Greenwave Competition. The course also offers opportunities to earn additional skills certifications, including bizSAFE Level 2, and noise monitoring and noise control certificates.



WORLDSKILLS CHAMPION

EWT graduate Raine Lim emerged as champion in the Water Technology category of the WorldSkills Competition 2022 Special Edition. Contestants from countries including Germany, Japan and Korea pitted their skills against each other in competency areas such as water quality testing, automation and electrical installations.

Partnerships

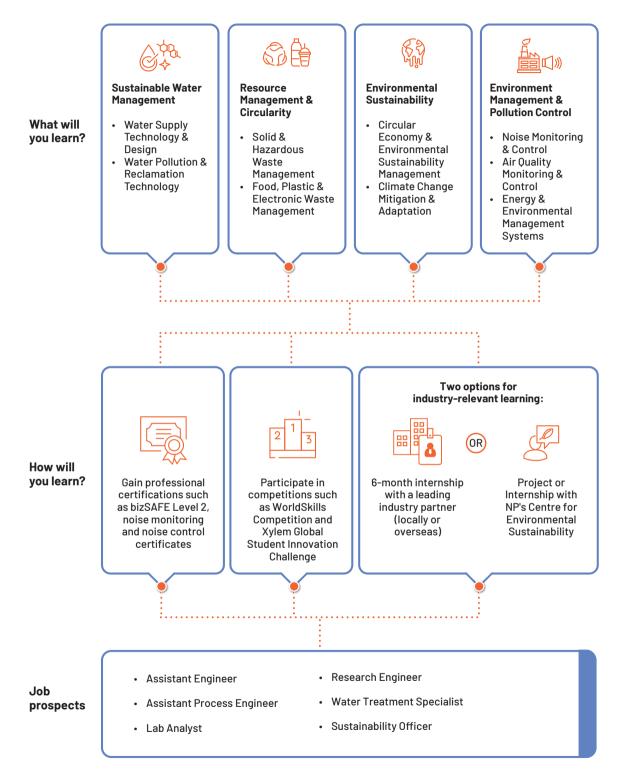








OVERVIEW OF YOUR EWT JOURNEY



WHAT YOU WILL LEARN

YEAR 1

- Civil Engineering FundamentalsEnvironmental Analytics &
- IoT – Environmental Engineering
- Principles - Engineering Mathematics
- 1 & 2

& Biotechnology

- Inorganic & Physical

- Career & Professional

Innovation Made Possible[^]

- Confident Communication:

Find Your Voice (VOICE)^

English Language Express^*

- Hydraulics

Chemistry

Preparation 1

- Health & Wellness^

- Environmental Microbiology Health, Safety & Environment
 - Noise Monitoring & Control

YEAR 2

 Solid & Hazardous Waste Management

- Energy & Environmental

Management Systems

- Air Quality Monitoring & Control

Environmental Sustainability

- Climate Change Mitigation &

- Circular Economy &

Management

Adaptation

- Water & Environmental
- Chemistry – Water Supply Technology &
- Design – Career & Professional
- Preparation 2
 World Issues: A Singapore Perspective[^]

YEAR 3

- Capstone ProjectIndustrial Wastewater &
- Membrane Technology
- Water Pollution & Reclamation Technology
 Six-month Internship
- (local/overseas)
- Project ID: Connecting the Dots^





^Critical Core modules account for 13 credit units of the diploma curriculum. They include modules in communication, innovation and world issues, as well as an interdisciplinary project. By bringing students from diverse diplomas together, the interdisciplinary project fosters collaboration to explore and propose solutions for real-world problems. NP aims to develop students to be agile and self-directed learners, ready for the future workplace.

^* For selected students only.

To keep our curriculum current and robust, diploma modules are subject to change over the three years. Please visit our website for latest updates.



FURTHER STUDIES

You can pursue various degree programmes at local universities, such as civil engineering, environmental engineering, environmental science, material science, architecture, and chemistry.

Graduates may even gain final-year entry to the Bachelor of Science in Environmental Sustainability and Management, or Environmental Science at the University of Plymouth, UK.

You may also receive module exemptions for related degrees at overseas universities, including: Australia

- Murdoch University
- The University of Adelaide
- The University of Queensland
- The University of Western Australia
- University of New South Wales

United Kingdom

- Newcastle University
- The University of Manchester
- The University of Birmingham
- The University of Plymouth



Teo Chun Yi Class of 2023

Pursuing a degree in Environmental Engineering at NUS under the Public Service Commission Scholarship

CAREER

You will be prepared for careers in multinational corporations, government agencies, university labs, and research institutes. The EWT course equips you with the foundation and flexibility to work across sectors such as chemical, environmental, civil, and workplace safety & health. You could pursue careers such as:

- Assistant Engineer
- Assistant Process Engineer
- Environment, Health & Safety (EHS) Officer
- Lab Analyst/Officer
- Research Engineer
- Sustainability Officer
- Water Treatment Specialist

Additional certificates will also qualify you for jobs such as a Noise Monitoring or Noise Control Officer.

Ho Jia Le Class of 2017

Currently an engineer at Tuas Water Reclamation Plant at PUB, Singapore's National Water Agency, lia Le was also a recipient of the Singapore Sustainability Scholarship



After earning a Specialist Diploma in Analytical Science and completing a workstudy programme, Qian Min is currently a lab analyst at SGS Testing & Control Services Singapore

ENTRY REQUIREMENTS

Aggregate Type ELR2B2-C To be eligible for consideration, candidates must have the following GCE 'O' Level examination (or equivalent) results.

> 'O' level Grade

| English Language | 1-7 |
|---|-----|
| Additional Mathematics/Mathematics | 1-6 |
| Any one of following subjects: | 1-6 |
| Biology | |
| Biotechnology | |
| Chemistry | |
| Computing/Computer Studies | |
| Design & Technology | |
| Electronics/Fundamentals of Electronics | S |
| Physics | |
| Science (Chemistry, Biology) | |
| Science (Physics, Biology) | |
| Science (Physics, Chemistry) | |
| | |

Applicants must also fulfil the aggregate computation requirements for the ELR2B2-C Aggregate Type (English Language, 2 relevant subjects and 2 other best subjects) listed at www.np.edu.sg/docs/ELR2B2.pdf.

For students with other qualifications, please refer to the NP website for the entry requirements and admissions exercise period.

CONTACT US

For the most up-to-date information on NP's Diploma in Environmental & Water Technology, log on to www.np.edu.sg/ewt

Our Graduates with that Something XTRA



CLINICAL PROTOCOL EXPERT

"The BMS course provided a firm foundation for me to understand the scientific background in clinical trial protocols. It was instrumental in guiding my career path and helped me secure my first two jobs at pharmaceutical MNCs."

SYLVIA CHIANG

Biomedical Science graduate, Class of 2007

As a Clinical Operations Manager at IQVIA, Sylvia oversees clinical trial research and regulatory processes in the region.



ASPIRING PHARMACIST

"My years at NP gave me a solid foundation in pharmaceutical knowledge and allowed me to explore the pharmacy profession in different settings. I am grateful to my lecturers for their guidance, which helped me to secure MOHH's Healthcare Merit Award and pursue my dream course in NUS. In the future, I plan to participate in the National Collaborative Prescribing Programme and pursue the Doctor of Pharmacy programme."

SONG MEOW YING

Pharmacy Science* graduate, Class of 2021

A recipient of the Lee Kuan Yew Award and Ngee Ann Polytechnic Outstanding Achievement Award, Meow Ying is pursuing a degree in Pharmacy at NUS.

*Renamed the Diploma in Pharmaceutical Science



GUARDIAN OF SINGAPORE'S BIODIVERSITY

"LDH has equipped me with the relevant skills and knowledge to kickstart my career in biodiversity conservation. My internship deepened my learning about Singapore's diverse biodiversity, which has driven me to pursue a career as a flora specialist to advocate for habitat and plant conservation."

SITI ZALEHA ABDULLAH

Landscape Design & Horticulture graduate, Class of 2016

Zaleha is a floral specialist at Camphora Pte Ltd. Together with her team, she conducts environmental impact assessments, and manages plans to safeguard Singapore's biodiversity.

Subject

Our Graduates with that Something XTRA



NUS SCHOLAR FOR CHEMICAL ENGINEERING

"During my internship, I applied fundamental process engineering concepts to large-scale process operations at Keppel's Marina East Desalination Plant. I further extended my learning through an in-house research internship at the material science research lab. With its emphasis on individual excellence and group-based project management skills, CBE has equipped me with practical and adaptable skills and knowledge."

TAN WEI XI

Chemical & Biomolecular Engineering graduate, Class of 2021

Wei Xi is a recipient of the NUS Merit Scholarship and is pursuing a degree in Chemical Engineering at NUS.



SUSTAINABILITY SCHOLAR IN CIVIL ENGINEERING

My learning journey at NP has been amazing. I am grateful for the opportunity to go on a Youth Expedition Project trip to the Philippines, as well as the many CCAs that I got to participate in. Even during the transition to home-based learning during the pandemic, my EWT lecturers were always there to support me. I look forward to working on sustainable solutions for the water industry after graduation!"

TAN SHERN KAI

Environmental & Water Technology graduate, Class of 2021

A recipient of the Singapore Sustainability Scholarship, Shern Kai is pursuing a degree in Civil Engineering at NTU.



PSC SCHOLAR FOR ENVIRONMENTAL ENGINEERING

"My internship at PUB was incredibly fulfilling. I had the opportunity to work with sustainability experts in the research and development team and was involved in a pilot project to maintain the quality of NEWater. Thanks to the industry exposure provided by EWT, I feel more confident in my career path in environmental engineering! I am excited to contribute to designing solutions for a greener future."

TEO CHUN YI

Environmental & Water Technology graduate, Class of 2023

Chun Yi is the recipient of the Lee Kuan Yew Award and Ngee Ann Polytechnic Outstanding Achievement Award. She is currently pursuing a degree in Environmental Engineering at NUS under the prestigious Public Service Commission Scholarship.

From Poly To Medical School

To date, 47 LSCT graduates have been accepted into local medical schools.





"I owe my achievements to many lecturers who carved out opportunities for me to grow and discover myself. Despite their busy schedules, they sacrificed their precious time to support my peers and me through intense university applications and interview cycles. Thank you for believing in our abilities and for your encouragement that kept us going."

HAZEL LAM Biomedical Science graduate, Class of 2020

Hazel is studying medicine at the NUS Yong Loo Lin School of Medicine.

Doctors & Trailblazers

Dr Ron Ng and Dr Soong Junwei made history when they became the first polytechnic graduates to gain direct admission into a local medical school. Dr Ng and Dr Soong graduated with a Diploma in Biomedical Laboratory Technology* and a Diploma in Biotechnology* respectively. They subsequently applied to enter medical school at the National University of Singapore under a discretionary admissions exercise. Today, Dr Ng specialises in geriatrics while Dr Soong practises at Singapore General Hospital.

*Subsumed under the Diploma in Biomedical Science







535 Clementi Road Singapore 599489 Admissions Hotline: 6463 1233 askNP@np.edu.sg

All information is correct at time of printing (Dec 2024 Printed on environmentally friendly pape