

COMMON ICT PROGRAMME

Interested in the world of infocomm technology but unsure about which course to choose? With the Common ICT Programme (CICTP), you will have more time to explore different disciplines before making a more informed choice.

During the first semester, you will gain an introduction to the field of ICT by understanding the roles, practices and career paths of ICT professionals. You will also learn the fundamentals of programming, design principles, cyber security concepts, as well as an overview of enterprise information systems that use data analytics for decision making.

You will get to choose your preferred discipline at the end of your first semester: Cybersecurity & Digital Forensics, Data Science, Immersive Media or Information Technology.

YEAR 1 COURSE MODULES

LEVEL 1.1

Computing Mathematics

This module introduces the basic concepts of relations and functions, matrices, statistical methods and relevant applications. The main emphasis is to develop students' ability in solving quantitative problems in computing mathematics, probability and statistics.

Cyber Security Fundamentals

This module provides an overview of the various domains of cyber security. It helps to develop an understanding of the importance of cyber security in today's digital world. It aims to provide an appreciation of cyber security from an end-to-end perspective. It covers fundamental security concepts, tools and techniques in domains such as data, end-user, software, system, network, physical, organisation, and digital forensics. It also helps to develop knowledge and skills in identifying common cyber threats and vulnerabilities, and to apply techniques to tackle these issues.

Design Principles

This module introduces students to basic elements and principles of design. Students will practice visual communication and self-branding through aesthetic use of line, shape, form, color, texture, typography, scale, contrast, rhythm and balance. Students will be trained in the usage of digital design tools and application of modern industrial practices to communicate the concepts, designs and solutions.

Data Science Fundamentals

This module provides an overview of Data Science, its importance in the world of data and how it affects the competitiveness of organisations. Learners will learn about the different areas within Data Science and the core pillars essential to practise in the area. Students will also be introduced to Design Thinking. Indicative topics include Introduction to Data Science, Big Data and Analytical Design Thinking.

Fundamentals for IT Professionals 1

This module provides a broad introduction to the field of ICT by exploring the roles, professional practice, ethical expectations and career development paths of IT professionals. Through a guided inculcation of interpersonal and teamwork skills with strong team bonding spirit, the module aims to deepen students' commitment to the sector that the course prepares them for. In addition, students will be required to begin charting their career path in the ICT industry by considering crucial aspects such as personal preferences and aptitude, job roles and responsibilities, skills needed and further education.

Programming 1

This module introduces the fundamentals of programming and how to develop programs using appropriate problem-solving techniques in a modular style. In this practice-oriented module, students are taught how to apply problem-

solving skills using a top-down structured programming methodology and given ample practice in translating solutions into computer programs, then test and debug the programs. Topics include data types, variables, expressions, statements, selection structures, loops, simple computation and algorithms, and the use of libraries. Students will also practise the use of pseudocodes, best practices of programming, debugging techniques with the help of tools, development of test cases, and suitable program documentation. In addition, they will study various areas where application software plays a prominent part in helping organisations solve problems. Students will be given ample opportunity for independent and self-directed learning.

LEVEL 1.2

Please refer to the core modules from the ICT Diploma that you major in.

YEAR 1 COURSE CURRICULUM

Module Name	Credit Units
Level 1.1 (21 hours per week)	
Computing Mathematics	4
Cyber Security Fundamentals	2
Design Principles	2
Data Science Fundamentals	2
Fundamentals for IT Professionals 1	2
Programming 1	5
Health & Wellness^	1
Innovation Made Possible^	3
English Language Express*	NA

Notes:

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

* For selected students only.

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.