

## HEALTH SCIENCES

Ngee Ann Polytechnic's **School of Health Sciences (HS)** calls to those who share its vision of creating a "Passion to Touch Lives". The School aims to inspire and transform students into caring healthcare professionals with its integrated, industry-oriented curriculum covering core modules in nursing and healthcare as well as contemporary topics such as life sciences and psychology.

Established in 2005, the School introduced the Diploma in Health Sciences (Nursing) to train nursing professionals who will meet the increased needs of an ageing population, and play a vital role in developing Singapore into a regional healthcare hub.

HS graduates can look forward to rewarding careers filled with challenges and making a real difference in the lives of many people.

### COURSE OFFERED

The School offers the Diploma in Health Sciences (Nursing) (HSN).

The HSN course is designed to nurture students to become competent and caring nursing professionals by integrating knowledge gained from nursing as well as biological, social and behavioural sciences. Armed with a curriculum that covers cell and molecular biology, clinical trials, intellectual property management and drug discovery, students are also trained for research in the healthcare and biomedical sciences sectors.

### MAJOR ACHIEVEMENTS

Hospitals and patients, who have received nursing care from HSN students on clinical attachments, have given very positive feedback on their performance. HSN students are well-regarded and often praised for their ability to perform their duties with enthusiasm, compassion and professionalism.

HSN students are the first in Asia to utilise the Personal Digital Assistants (PDAs) that allow them to access databases on drugs, diseases, treatment techniques and other useful information on the Internet. These PDAs empower the students to provide quality care to the patients as they are able to access relevant information immediately, analyse the situation and provide the necessary nursing and medical assistance required. Students are kept abreast with current practices in their field of nursing.



## FACILITIES & STAFF

The School of Health Sciences has a highly qualified team of professionals with many years of experience in teaching and working in hospitals. Staff employ a wide range of teaching strategies and tools to bring out the best in students. They constantly engage students in critical thinking and provide them with constant guidance and support.

Lectures and tutorials are supplemented by project work, presentations, laboratory practicals and training in simulated and real-time clinical settings. These enable students to conceptualise clearly and integrate theory in practical settings. Students are required to reflect upon their learning experiences by using journals and discussions, thereby encouraging their critical thinking, clinical judgement and competency as healthcare professionals.

The School is equipped with state-of-the-art facilities such as a Patient Simulation Centre, nursing wards and an operating theatre. The Patient Simulation Centre uses lifelike mannequins in both Intensive Care Unit and Emergency Department settings, where life-saving techniques are taught. The operating theatre allows students to have hands-on experience in a surgical environment before they are deployed to clinical attachments at healthcare institutions. There are also anatomy and physiology laboratories, and a microbiology laboratory equipped with molecular diagnostic equipment and culture facilities.

## COLLABORATIONS

HSN students undergo 45 weeks of clinical attachments at various healthcare establishments during their course. Clinical attachments are often to general wards, special discipline wards/units, primary healthcare settings, rehabilitation centres and nursing homes.

Staff and students are also engaged in research projects in collaboration with healthcare institutions. Such projects teach quality care and management of patients.

The School maintains close links with major healthcare institutions from SingHealth Group and National Healthcare Group including private and voluntary organisations. These institutions include Singapore General Hospital, Alexandra Hospital, Tan Tock Seng Hospital, Changi General Hospital, Institute of Mental Health, KK Women's and Children's Hospital, National University Hospital, Raffles Hospital, St Luke's Hospital and Bright Vision Hospital. Other healthcare sectors include day rehabilitation centres and private nursing homes.

HSN students can look forward to various sponsorship opportunities from hospitals during their studies. The sponsorships can cover tuition fees while providing a monthly training allowance.

## DIPLOMA IN HEALTH SCIENCES (NURSING) (HSN) (3-YEAR COURSE)

SCHOOL OF HEALTH SCIENCES



The full-time **Diploma in Health Sciences (Nursing) (HSN)** was introduced in 2005 to inspire and train students to become professional, caring nurses to meet the rising demands and needs of an ageing population. HSN graduates are well-equipped to play a vital role in developing Singapore into a regional healthcare hub.

The course provides comprehensive training in the biological, social and behavioral sciences, together with 45 weeks of clinical attachment throughout the three-year course to help students apply what they learn in real-life settings. In addition to core nursing modules, students will also learn about the life sciences. The curriculum includes the latest developments in biomedical sciences such as cell and molecular biology, clinical trials, intellectual property management and drug discovery.

**DIPLOMA IN HEALTH SCIENCES (NURSING) (HSN) (3-YEAR COURSE)**  
SCHOOL OF HEALTH SCIENCES

HSN graduates are versatile professionals who are well-prepared for nursing positions in the healthcare, pharmaceutical and biomedical industries. They are also equipped to explore opportunities in fields other than the health services.

### ENTRY REQUIREMENTS

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

Subject	'O' Level Grade
English	1-7**
Mathematics (Elementary/Additional)	1-6
Science (with Physics or Chemistry or Biology component) or Food & Nutrition or Human & Social Biology or General Science	1-6

The aggregate computation for selection is based on grades obtained for English, Mathematics, Science (including Food & Nutrition, Human & Social Biology and General Science) and two other subjects.

\*\* Candidates with English as a second language (EL2) must have attained a minimum grade of 6.

Due to the special requirements of the healthcare profession, all candidates have to pass a medical examination and be free from physical handicap to ensure suitability.

### CAREER PROSPECTS

HSN graduates can qualify to practise as registered staff nurses accredited with the Singapore Nursing Board, and enjoy a good salary package and career progression.

Graduates can embark on fulfilling careers as nurse clinicians, nurse managers or nurse educators.

Alternatively, HSN graduates can serve the community in a variety of settings related to the healthcare, pharmaceutical and biomedical industries, and even contribute to patient care through research on clinical procedures. Members of the nursing profession are highly sought after worldwide. Thus the Diploma in Health Sciences (Nursing) opens doors to professions both locally and internationally.

### ACCREDITATION FOR FURTHER STUDIES

The HSN diploma is recognised by local and established overseas universities. HSN graduates have recently been offered accreditation to Medicine and Dentistry courses at the National University of Singapore under the Exceptional Individual Scheme (EIS). Many Australian universities allow HSN graduates to complete their degree in one year.

In addition, several Australian universities such as the University of Sydney, La Trobe University, Melbourne University and Griffith University run part-time courses in Singapore. Many staff nurses opt for such courses as they are able to continue working while studying. The Singapore Nursing Board also accredits these degree courses.

### COURSE STRUCTURE

#### FIRST-YEAR MODULES

<p>Level 1.1</p> <ul style="list-style-type: none"> <li>• Fundamentals of Nursing 1</li> <li>• Nursing Skills Laboratory 1.1</li> <li>• Psychology &amp; Sociology 1</li> <li>• Anatomy &amp; Physiology 1</li> <li>• Microbiology &amp; Infection Control</li> <li>• Creative &amp; Innovative Thinking Skills<sup>^</sup></li> <li>• Communication in Nursing Practice</li> <li>• Clinical Attachment 1.1</li> </ul>	<p>Level 1.2</p> <ul style="list-style-type: none"> <li>• Fundamentals of Nursing 2</li> <li>• Nursing Skills Laboratory 1.2</li> <li>• Cell &amp; Molecular Biology</li> <li>• Pharmacology 1</li> <li>• Anatomy &amp; Physiology 2</li> <li>• Nursing Research 1</li> <li>• Singapore &amp; World Issues<sup>^</sup></li> <li>• Clinical Attachment 1.2</li> <li>• Sports &amp; Wellness<sup>^</sup></li> </ul>
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#### SECOND-YEAR MODULES

<p>Level 2.1</p> <ul style="list-style-type: none"> <li>• Nursing Science 1</li> <li>• Nursing Science 2</li> <li>• Nursing Skills Laboratory 2.1</li> <li>• Pharmacology 2</li> <li>• Nursing Research 2</li> <li>• Clinical Attachment 2.1</li> </ul>	<p>Level 2.2</p> <ul style="list-style-type: none"> <li>• Nursing Science 3</li> <li>• Nursing Science 4</li> <li>• Nursing Skills Laboratory 2.2</li> <li>• Psychology &amp; Sociology 2</li> <li>• Law, Ethics &amp; Health Care</li> <li>• Clinical Attachment 2.2</li> </ul>
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#### FINAL-YEAR MODULES

<p>Level 3.1</p> <ul style="list-style-type: none"> <li>• Nursing Science 5</li> <li>• Nursing Management</li> <li>• Work &amp; Professional Development</li> <li>• Research Project</li> <li>• Nursing Skills Laboratory 3.1</li> <li>• Life Sciences Elective</li> </ul>	<p>Level 3.2</p> <ul style="list-style-type: none"> <li>• Clinical Attachment 3.2</li> </ul>
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<sup>^</sup> For more details on the Interdisciplinary Studies (IS) module, please log on to [www.np.edu.sg/is/](http://www.np.edu.sg/is/)

## COURSE MODULES

### LEVEL 1.1

#### Fundamentals of Nursing 1

This module is composed of three parts – Foundation of Professional Nursing, Principles of Health Promotion, Disease Prevention & Rehabilitation, and Nursing Process. The module surveys the development of nursing in Singapore and abroad, as well as the principles of nursing practice, with a focus on the caring concept. The framework of the nursing process is introduced and used for the development of all-care plans to meet the needs of the patients. Students will also learn how to promote health awareness, disease prevention and rehabilitation in the primary health care system.

#### Nursing Skills Laboratory 1.1

This module equips students with the knowledge and skills needed to meet patients' basic health needs at a beginner's level. These essential skills are fundamental to nursing practice and can be applied in a variety of health care settings.

#### Psychology & Sociology 1

This module presents an overview of psychology, with an introduction to sociological concepts and perspectives for the broad understanding and analysis of society and culture. It provides students with an understanding of how psychology and sociology are applied to health care practice.

#### Anatomy & Physiology 1

This module provides a basic knowledge of the anatomy and physiology of the human body at the cellular, tissue and systems level. Various body systems are covered, including the musculo-skeletal, cardiovascular, respiratory, gastro-intestinal, renal, nervous, reproductive, integumentary, endocrine, blood, lymphatic and immune systems. The inter-relationships of the body systems and how they maintain homeostasis are also examined.

#### Microbiology & Infection Control

This module examines basic microbiology, immunology and the infection process, the body's defence mechanism, and the host-immune response to infections. Students will learn about the modes of transmission of microorganisms, and the prevention and control of infection in the hospital and community.

#### Creative & Innovative Thinking Skills

This module is designed to promote creative, analytical and critical thinking skills. It prepares students to approach their studies with an open and inquiring mind, moving away from looking for the 'right answer'. The learning processes will enable them to discover their creative potential and thinking abilities.

#### Communication in Nursing Practice

This module focuses on developing effective communication skills for students to establish caring and helping relationships with patients, their families, and health care members.

#### Clinical Attachment 1.1

This module offers opportunities for students to provide care to individuals with health needs, diseases and illnesses across a lifespan. Students should apply the knowledge and skills learnt in clinical practice in the community and hospital settings.

### LEVEL 1.2

#### Fundamentals of Nursing 2

This module is composed of four parts – Health Assessment, Caring & Clinical Judgement, Pre- and Post-Operative Nursing Care, and Gerontological Nursing. Students will learn how to interview patients to piece together a health history, and perform a general physical assessment at the beginner's level. Besides imparting knowledge on how to care for patients undergoing surgeries, this module also covers the ageing process, problems faced by the elderly and how to care for them in various health care settings.

#### Nursing Skills Laboratory 1.2

This module provides students with strategies to assess patients' health needs, formulate nursing diagnoses, and assist in implementing nursing interventions and care plans.

#### Cell & Molecular Biology

This module presents the basic living unit (the cell), cell structures and functions, and the central dogma of genetics. It also covers gene cloning and some advanced molecular techniques.

#### Pharmacology 1

This module introduces students to pharmacokinetics and pharmacodynamics. The principles for safe drug administration are highlighted and the nursing process framework is utilised to avoid drug errors. Systems of measurement and drug calculation are also included.

#### Anatomy & Physiology 2

This module provides nursing students with a basic knowledge of the anatomy and physiology of the human body at the systems level. Body systems covered include the nervous, reproductive, integumentary and endocrine systems. Students will learn the way the body's receptors provide sensory information, and how the sensory pathways distribute this information to provide us with our sense of smell, taste, vision, equilibrium and hearing.

#### Nursing Research 1

In this module, students will be introduced to nursing research principles, research methodologies and nursing research processes.

#### Singapore & World Issues

This module takes a global approach to events and issues. With the tutors as facilitators and moderators, the aim is to enhance students' understanding of various developments in the context of Singapore as a nation state, and to take the students through the process of choice and decision-making.

#### Clinical Attachment 1.2

This module offers students more exposure in caring for patients in a hospital setting. Students get to apply the knowledge and skills learnt to clinical practice.

#### **LEVEL 2.1**

##### **Nursing Science 1**

This module commences with the study of human physiological processes, followed by diseases and disorders of the immune, cardiovascular and respiratory systems. Students will consolidate their knowledge of anatomy and physiology, pathophysiology, and pharmacology, as well as medical and surgical management in caring for patients with these diseases and disorders. The nursing process framework will be used to develop care plans that meet the physical, psychosocial and spiritual needs of the patients.

##### **Nursing Science 2**

This module commences with the study of human physiological processes followed by diseases and disorders of the renal, gastrointestinal, hepatic and pancreatic systems. Students will consolidate their knowledge of anatomy, and physiology, pathophysiology, pharmacology, as well as medical and surgical management in caring for patients with these diseases and disorders. The nursing process framework will be used to develop care plans that meet the physical, psychosocial and spiritual needs of the patients.

##### **Nursing Skills Laboratory 2.1**

This module equips students with the knowledge and skills to handle patients, providing preventive, therapeutic and rehabilitative care. These developmental skills are necessary to enable students to implement plans in caring for adult patients with diseases and medical-surgical disorders of body systems.

##### **Pharmacology 2**

This module builds on Pharmacology 1 and adopts a pathophysiological approach for the study of pharmacology. The classification of drugs according to the disorders of the body systems and diseases places the drugs in the context of how they are used therapeutically. Nursing considerations are emphasised and students are required to use the nursing process framework in drug administration.

##### **Nursing Research 2**

This module introduces quantitative research methods, statistics and qualitative research methods. Students will be presented with evidence-based models, and will acquire knowledge and skills to write research proposals.

##### **Clinical Attachment 2.1**

This module offers opportunities for students to care for individuals with diseases in a hospital setting. Students should apply the knowledge and skills learnt to clinical practice.

#### **LEVEL 2.2**

##### **Nursing Science 3**

This module builds on Nursing Science 1 and will cover the diseases and disorders of the central nervous, endocrine, reproductive, musculoskeletal, hematological, integumentary and sensory systems. Students will consolidate their knowledge of anatomy, physiology, pathophysiology, pharmacology, as well as medical and surgical management in caring for patients. The nursing process framework will be used to develop care plans that meet the physical, psychosocial and spiritual needs of the patients.

##### **Nursing Science 4**

This module introduces students to specialties nursing. The unit on maternal and infant nursing provides a basic understanding of conception and care of the mother during the prenatal, intranatal and postnatal periods, as well as care of the infant. The unit on paediatric nursing prepares students for pediatric clinical practice in hospital. In the area of mental health nursing, students will be guided in assessing and planning nursing care for patients with psychiatric disorders, as well as exploring the legal and ethical issues related to mental health nursing.

##### **Nursing Skills Laboratory 2.2**

This module equips students with the knowledge and skills to provide preventive, therapeutic and rehabilitative care to meet patients' health needs. These developmental skills are necessary to enable students to care for patients with mental health problems, obstetric and gynaecological disorders, and children with medical-surgical disorders.

##### **Psychology & Sociology 2**

This module provides students with an understanding of human development, health psychology, abnormal psychology, and medical sociological theories, and how these concepts apply to health care practice. It also provides students with an understanding of psychological and sociological perspectives on health and illnesses.

##### **Law, Ethics & Health Care**

This module helps students to understand the laws that govern nursing practice, and explores ethical principles and moral standards of conduct. Students are also encouraged to examine their own personal and professional values and beliefs.

##### **Clinical Attachment 2.2**

This module gives students a first-hand experience in caring for patients across a lifespan in a hospital setting. Students should apply the knowledge and skills learnt to clinical practice. They will be assigned to mental health, paediatric, obstetric and gynaecology units, or the Communicable Disease Centre for the clinical attachment practice.

#### **LEVEL 3.1**

##### **Nursing Science 5**

This module has two components, Peri-Operative Nursing and Emergency & Critical Care Nursing. Students will learn about the physical set-up and environment of the operating room and find out about the responsibilities of the nurse. Students will also be introduced to the management of acute or life-threatening conditions at the Accident and Emergency unit and the care of the critically ill in the high dependency/intensive care units.

### Nursing Management

This module provides students with an understanding of the health care system and the organisation of nursing services. Students will examine the role of the registered nurse as a manager and leader.

### Work & Professional Development

This module aims to provide students with a fundamental knowledge of organisations, as well as to promote the personal and professional development of nurses. The knowledge gained will help the students to adapt better in their future work environment.

### Research Project

In this module, students will conduct a clinical research project that will be primarily evidence-based in nature. Students will be exposed to report writing and research workshops.

### Nursing Skills Laboratory 3.1

This module equips students with the knowledge and skills to provide preventive, therapeutic and rehabilitative care for patients. This is necessary to enable students to co-ordinate and manage patient care in a variety of health care settings. Students will also learn how to care for patients in specialised settings such as emergency unit, operation theatre and high dependency/intensive care unit.

### Life Sciences Elective

This module enables students to select either the life sciences elective on Drug Discovery & Development, or the elective on Clinical Trials & Intellectual Property Management. The elective on Drug Discovery & Development will give students an appreciation of how compounds are identified and developed into drugs. The elective on Clinical Trials & Intellectual Property Management will introduce the fundamentals of clinical trials, including design, conduct, analysis and interpretation of trial results, and the application of Intellectual Property management to clinical trials.

### LEVEL 3.2

#### Clinical Attachment 3.2

This module gives students experience in caring for patients across a lifespan in a hospital setting. Students will apply the knowledge and skills learnt to clinical practice. They will be assigned to specialised settings such as the emergency unit, operation theatre and high dependency/intensive care unit. Students are also required to complete a 14-week Pre-Registration Consolidation Practice (PRCP) in a medical or surgical/orthopaedic discipline.

## COURSE CURRICULUM

Module No.    Module Name    Credit Units

### YEAR 1

#### Level 1.1 (Academic: 26.5 hours per week)

#### Clinical attachment: 40 hours per week

1.	Fundamentals of Nursing 1	4
2.	Nursing Skills Laboratory 1.1	6
3.	Psychology & Sociology 1	4
4.	Anatomy & Physiology	5
5.	Microbiology & Infection Control	3.5
6.	Creative & Innovative Thinking Skills^	2
7.	Communication in Nursing Practice	2
8.	Clinical Attachment 1.1	5

## COURSE CURRICULUM

Module No.    Module Name    Credit Units

### YEAR 1

#### Level 1.2 (Academic: 28 hours per week)

#### Clinical attachment: 40 hours per week

9.	Fundamentals of Nursing 2	4
10.	Nursing Skills Laboratory 1.2	6
11.	Cell & Molecular Biology	4
12.	Pharmacology 1	3
13.	Anatomy & Physiology 2	5
14.	Nursing Research 1	2
15.	Singapore & World Issues^	2
16.	Clinical Attachment 1.2	5
17.	Sports & Wellness^	2

### YEAR 2

#### Level 2.1 (Academic: 28 hours per week)

#### Clinical attachment: 40 hours per week

18.	Nursing Science 1	7
19.	Nursing Science 2	6
20.	Nursing Skills Laboratory 2.1	8
21.	Pharmacology 2	3
22.	Nursing Research 2	4
23.	Clinical Attachment 2.1	5

#### Level 2.2 (Academic: 27 hours per week)

#### Clinical attachment: 40 hours per week

24.	Nursing Science 3	6
25.	Nursing Science 4	7
26.	Nursing Skills Laboratory 2.2	8
27.	Psychology & Sociology 2	4
28.	Law, Ethics & Health Care	2
29.	Clinical Attachment 2.2	6

### YEAR 3

#### Level 3.1 (Academic: 27 hours per week)

30.	Nursing Science 5	3
31.	Nursing Management	5
32.	Work & Professional Development	4
33.	Research Project	4
34.	Nursing Skills Laboratory 3.1	8
35.	Life Sciences Elective	3

#### Level 3.2

#### Clinical attachment: 40 hours per week

36.	Clinical Attachment 3.2	24
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### Notes:

^ For more details on Interdisciplinary Studies (IS) module, please log on to [www.np.edu.sg/is/](http://www.np.edu.sg/is/)

### IS Modules

The School of Interdisciplinary Studies (IS) delivers the interdisciplinary curriculum under the Ngee Ann Learning Model (NLM). The NLM was introduced in 2001 to nurture a new generation of professionals with multidisciplinary skills to meet the challenges of a knowledge-based economy. The NLM incorporates core disciplines and Interdisciplinary Studies. It also nurtures innovative and entrepreneurial traits through the Innovation & Enterprise in Action (I & E in Action) module. IS modules challenge boundaries and offer insights into Communication, Entrepreneurship, Life Skills, Media & the Arts, and Science & Technology.