4.2.2.13 Doctor of Pharmacy (PharmD) (Full-Time or Part-Time)

This programme is available in full-time and part-time mode.

In response to the changing health care environment, Pharmacy as a profession is continually evolving to expand its scope of services and responsibilities to meet the needs of patients, health care systems, and other professionals. Traditionally, the primary responsibility of the pharmacist was the safe and accurate dispensing of drugs prescribed by the physician. Today, pharmacists are involved in the clinical care of their patients. To face the challenges in the practice of pharmacy in Singapore and abroad, pharmacists have to be equipped with not only the knowledge, but also the skills, attitudes and values required to deliver high quality, consistent and safe treatments to patients in collaboration with other health care professionals.

The primary objective of the NUS Doctor of Pharmacy (PharmD) programme is to train pharmacy practitioners to possess leadership qualities, advanced expertise and clinical experience that enable them to be at the forefront of the Pharmacy profession and health care in a variety of settings - institutional, community practice, government, academia, industry, translational research and drug development. The curriculum emphasizes a patient-centred course of study and involves a structure that will enable the students to develop into reflective practitioners with skills and attitudes to evaluate critically and modify practices in a timely and effective manner.

Criteria for Admission

Candidates must be holders of the following degree, or its equivalent:

- Bachelor of Science in Pharmacy (Honours).
- Candidates must have fulfilled the pre-registration pharmacist training requirements and registered to practise Pharmacy in Singapore.
- Preference for those with relevant work experience as a pharmacist (hospital, community etc.)
- Candidates will also be evaluated based on an interview, their written statement of career goals and at least three letters of recommendation.

Programme Structure

1. Length of Study

Full-Time Programme may be completed over 2 academic years. The didactic component may be completed during the first 10-months followed by the clerkship rotations over the following 40-50 weeks.

Part-Time Programme may be completed over 4-6 academic years. The didactic component may be completed over a period of 22 to 34 months followed by the clerkship rotations during the following 2 to
3 academic years, by completing 2-3 rotations per academic year.

2. Curriculum

The didactic component of the programme consists of 16 modules, comprising 10 essential Level 5000 modules and 6 elective Level 5000 modules as described below. Students must read the 10 essential Level 5000 modules and choose up to 3 elective Level 5000 modules.

**Didactic Coursework**

**Essential Modules (38 MC)**

- PR5135 Foundations in Advanced Pharmacy Practice (4 MC)
  - Statistics, research methodology, clinical research, drug information, literature evaluation, quality improvement, drug use evaluation

- PR5134 Advanced Skills in Pharmacy Practice (4 MC)
  - History taking, clinical documentations, communication skills, basic physical assessment skills, simulation-based training

- PR5136 Pharm.D. Seminar & Teaching (4 MC)
  - Presentation skills, peer evaluation, teaching of undergraduate students

- PR5113 Clinical Pharmacokinetics and Therapeutic Drug Monitoring (4 MC)
  - Basic pharmacokinetics, pharmacokinetics and dynamics in renal impairment, hepatic impairment, oncology, vancomycin, aminoglycosides, antiepileptics, immunosuppressants, antifungals

- PR5130 Advanced Pharmacotherapy I (2 MC)
  - Infectious diseases, hepatology

- PR5131 Advanced Pharmacotherapy II (2 MC)
  - Acute cardio, stroke, fluid and electrolytes

- PR5132 Advanced Pharmacotherapy III (2 MC)
  - Oncology & supportive care

- PR5133 Advanced Pharmacotherapy in Special Populations (2 MC)
  - Pediatrics, women’s health

- PR5137 Advanced Pharmacotherapy in Geriatrics (2 MC)
• PR5239 Clinical Pharmacy Research Project (12 MC)

• Study design, IRB application, data collection and analysis, research report, presentations.

**Elective Modules (6 MC) – undertake 2 to 3 elective modules to make up 6 MC**

• PR5230 Pharmacoeconomics and Outcomes Research (4 MC)
• Pharmacoeconomics studies (CEA, CUA, CBA, CMA), HRQoL, modelling
• PR5230A Pharmacoeconomics (2 MC)
• PR5237 Management of Older Patients (2 MC)
• PR5131A Advanced Pharmacotherapy IIA (2 MC)
• Emergency medicine and critical care
• PR5132A Advanced Pharmacotherapy IIIA (2 MC)
• Haematology and immunology
• PR5234A Concepts in Pharmacogenomics (2 MC)

**Clerkships**

All PharmD candidates must complete 40 weeks of clerkship consisting of eight 5-week attachments at various practice settings. The clerkship component of the programme aims to provide hands-on application of the knowledge gained in the didactic modules, and to develop the clinical skills necessary to provide advanced pharmaceutical care.

• Compulsory clerkships (20 MC) (5 weeks each, total of 20 weeks)
  This will consist of clerkships in the following areas:

  • PR5150 Ambulatory Care (5 MC)
  • PR5151 Adult Acute Care Medicine (5 MC)
  • PR5152 Adult General Medicine (5 MC)
  • PR5154 Drug Information (5 MC)

• Elective clerkships (20 MC) (5 weeks each, total of 20 weeks)
  This will consist of four 5-week attachments to allow students to gain exposure to a broad range of pharmacy practice settings, as well as to allow them to pursue areas of personal interest. Options for elective clerkships will depend on available resources and clerkship sites.

  • PR5250 Elective Clerkship I (5 MC)
  • PR5251 Elective Clerkship II (5 MC)
  • PR5252 Elective Clerkship III (5 MC)
  • PR5253 Elective Clerkship IV (5 MC)

**Graduation Requirements**

Candidates will need to complete 44 MC worth of modules plus clerkships (40 MC) as indicated in the curriculum. To graduate with the PharmD degree, the candidate must have achieved a CAP of at least 3.5 for all essential and elective modules, in addition to passes for all eight clinical clerkships.