



NUS
National University
of Singapore

Yong Loo Lin
School of Medicine

STUDY PLAN

MASTER OF SCIENCE IN
MEDICAL PHARMACOLOGY
(MSc PHC)



PROPOSED STUDY PLAN

PROGRAMME DURATION

- Full-time students are expected to complete the programme within 12 - 24 months. The maximum candidature is 24 months; excluding Leave of Absence (LOA).
- Part-time students are expected to complete the programme within 24 - 36 months. The maximum candidature is 36 months; excluding Leave of Absence (LOA).

GRADUATION REQUIREMENTS

To graduate, students must complete 40 units of coursework.

This is made up of 5-6 compulsory core courses, elective courses, and 1 capstone project/industry internship.

Students can choose to specialise in one of the 4 specialisations offered: Clinical, Translation, Education, and Regulatory.

To graduate with a specialisation, students must complete **a minimum of 3 elective courses from their chosen specialisation.**

Full-time students (Complete in 1 year)

Please refer to the following provisional timetable for the programme:

SPECIALISATION IN CLINICAL PHARMACOLOGY

	Semester 1			Semester 2			Total Units
CORE COURSES	PHC5003	Effective Scientific Communication	2 units	ABM5001	Leadership in Biomedicine	2 units	16 units
	PHC5006	Clinical Pharmacology I	4 units	ABM5002	Advanced Biostatistics for Research	2 units	
				PHC5004	Ethics & Good Practice in Medicinal Research	2 units	
				PHC5007	Clinical Pharmacology II	4 units	
	PHC5001 Capstone Project						6 units
ELECTIVE COURSES	Choose at least 3 Clinical Specialisation elective courses and additional electives from any specialisation to reach 18 units						18 units
	Clinical Specialisation Electives (5 available):						
	PHC5101	Clinical Trial Design and Management	4 units	PHC5103	Personalized Medicines and Pharmacometrics	4 units	
	PHC5102	N-of-1 Pharmacology	2 units	PHC5104	Pharmacovigilance & Regulatory Affairs	4 units	
				PHC5105	Natural Products and Complementary Medicine	2 units	
							40 units

SPECIALISATION IN TRANSLATIONAL PHARMACOLOGY

	Semester 1		Semester 2		Total Units		
CORE COURSES	PHC5003	Effective Scientific Communication	2 units	ABM5001	Leadership in Biomedicine	2 units	12 units
	PHC5005	Principles and Praxis of Pharmacology	4 units	ABM5002	Advanced Biostatistics for Research	2 units	
				PHC5004	Ethics & Good Practice in Medicinal Research	2 units	
	PHC5001 Capstone Project					6 units	
ELECTIVE COURSES	<i>Choose at least 3 Translational Specialisation elective courses and additional electives from any specialisation to reach 22 units</i>					22 units	
	Translational Specialisation Electives (7 available):						
	PHC5106	Toxicology and Safety Assessment	4 units	PHC5107	Next Generation Medicines: From Bench to Bedside		4 units
	MDG5204	Advanced Human Pharmacology	4 units	PHC5108	Green and Sustainable Pharmacology		2 units
	MDG5252	Understanding IP and Patents in the Biomedical Industry	4 units	PHC5116	The Responsible In-vivo Scientist		2 units
				MDG5232	Current Practices in Biotechnology		4 units
						40 units	

SPECIALISATION IN PHARMACOLOGY EDUCATION

	Semester 1		Semester 2		Total Units		
CORE COURSES	PHC5003	Effective Scientific Communication	2 units	PHC5009	Leadership and Innovation in Healthcare Education	2 units	16 units
	PHC5005	Principles and Praxis of Pharmacology	4 units	PHC5011	Curriculum design for Pharmacology	4 units	
	PHC5012	Mixed Methods Research in Medical Education	4 units				
	PHC5001 Capstone Project					6 units	
ELECTIVE COURSES	Choose at least 3 Education Specialisation elective courses and additional electives from any specialisation to reach 18 units					18 units	
	Education Specialisation Electives (3 available):						
	PHC5115	Neuroscience of Learning for Healthcare Educators	2 units	PHC5113	Teaching Diverse Minds in Healthcare Education		4 units
			PHC5114	Transforming Your Teaching using Technology	4 units		
						40 units	

SPECIALISATION IN REGULATORY PHARMACOLOGY

Semester 1				Semester 2				Total Units
CORE COURSES	PHC5003	Effective Scientific Communication	2 units	PHC5004	Ethics & Good Practice in Medicinal Research (TBC)	2 units	18 units	
	PHC5005	Principles and Praxis of Pharmacology	4 units	PHC5104	Pharmacovigilance & Regulatory Affairs	4 units		
	PHC5008	Regulatory Affairs Foundations and Practical Approach	2 units					
	PHC5106	Toxicology and Safety Assessment	4 units					
ELECTIVE COURSES	Choose at least 3 Regulatory Specialisation elective courses and additional electives from any specialisation to reach 16 units						16 units	
	Regulatory Specialisation Electives (5 available):							
	PHC5110	Regulatory application of New Approach Methodologies (NAMs) & Next-Gen Risk Assessment	2 units	PHC5109	Regulatory and Safety Sciences for Medical Devices	2 units		
	PHC5111	Integrated Biorisk Preparedness for Biomedical Professionals	4 units	PHC5112	Regulatory Science for Healthcare Products	2 units		
				PHC5116	The Responsible In-vivo Scientist	2 units		
SEM 3	PHC5002	Industry Internship	Students who do not secure an internship by end of Semester 1 / beginning of Semester 2 will take on the Capstone Project PHC5001				6 units	
							40 units	

Part-time students (Complete in 2 years)

SPECIALISATION IN CLINICAL PHARMACOLOGY

Year 1						Year 2					
Semester 1			Semester 2			Semester 1			Semester 2		
CORE COURSES - 16 units						ELECTIVE COURSES - 18 units					
PHC5003	Effective Scientific Communication	2 units	ABM5001	Leadership in Biomedicine	2 units	Choose at least 3 Clinical Specialisation elective courses and additional electives from any specialisation to reach 18 units					
PHC5006	Clinical Pharmacology I	4 units	ABM5002	Advanced Biostatistics for Research	2 units	Clinical Specialisation Electives (5 available):					
			PHC5004	Ethics & Good Practice in Medicinal Research	2 units	PHC5101	Clinical Trial Design and Management	4 units	PHC5103	Personalized Medicines and Pharmacometrics	4 units
			PHC5007	Clinical Pharmacology II	4 units	PHC5102	N-of-1 Pharmacology	2 units	PHC5104	Pharmacovigilance & Regulatory Affairs	4 units
									PHC5105	Natural Products and Complementary Medicine	2 units
CAPSTONE PROJECT - 6 units											
PHC5001		Capstone Project - To be completed in one year (either Year 1 or Year 2)									6 units

SPECIALISATION IN TRANSLATIONAL PHARMACOLOGY

Year 1						Year 2					
Semester 1			Semester 2			Semester 1			Semester 2		
CORE COURSES - 12 units						ELECTIVE COURSES - 22 units					
PHC5003	Effective Scientific Communication	2 units	ABM5001	Leadership in Biomedicine	2 units	<i>Choose at least 3 Translational Specialisation elective courses and additional electives from any specialisation to reach 22 units</i>					
PHC5005	Principles and Praxis of Pharmacology	4 units	ABM5002	Advanced Biostatistics for Research	2 units	Translational Specialisation Electives (7 available):					
			PHC5004	Ethics & Good Practice in Medicinal Research	2 units	PHC5107	Next Generation Medicines: From Bench to Bedside	4 units	PHC5106	Toxicology and Safety Assessment	4 units
						PHC5108	Green and Sustainable Pharmacology	2 units	MDG5204	Advanced Human Pharmacology	4 units
						MDG5232	Current Practices in Biotechnology	4 units	MDG5252	Understanding IP and Patents in the Biomedical Industry	4 units
									PHC5116	The Responsible In-vivo Scientist	2 units
CAPSTONE PROJECT - 6 units											
PHC5001	Capstone Project - <i>To be completed in one year (either Year 1 or Year 2)</i>									6 units	

SPECIALISATION IN PHARMACOLOGY EDUCATION

Year 1				Year 2							
Semester 1		Semester 2		Semester 1		Semester 2					
CORE COURSES - 10 units		ELECTIVE COURSES - 18 units				CORE COURSES - 6 units					
PHC5003	Effective Scientific Communication	2 units	Choose at least 3 Education Specialisation elective courses and additional electives from any specialisation to reach 18 units		PHC5009	Leadership and Innovation in Healthcare Education	2 units				
PHC5005	Principles and Praxis of Pharmacology	4 units	Education Specialisation Electives (3 available):		PHC5011	Curriculum design for Pharmacology	4 units				
PHC5012	Mixed Methods Research in Medical Education	4 units	PHC5113	Teaching Diverse Minds in Healthcare Education				4 units	PHC5115	Neuroscience of Learning for Healthcare Educators	2 units
			PHC5114	Transforming Your Teaching using Technology				4 units			
CAPSTONE PROJECT - 6 units											
PHC5001		Capstone Project - To be completed in one year (either Year 1 or Year 2)				6 units					

SPECIALISATION IN REGULATORY PHARMACOLOGY

Year 1			Year 2		
Semester 1		Semester 2	Semester 1		Semester 2
CORE COURSES - 12 units		ELECTIVE COURSES - 16 units		CORE COURSES - 6 units	
PHC5003	Effective Scientific Communication 2 units	Choose at least 3 Regulatory Specialisation elective courses and additional electives from any specialisation to reach 16 units Regulatory Specialisation Electives (5 available):		PHC5004	Ethics & Good Practice in Medicinal Research (TBC) 2 units
PHC5005	Principles and Praxis of Pharmacology 4 units			PHC5104	Pharmacovigilance & Regulatory Affairs 4 units
PHC5008	Regulatory Affairs Foundations and Practical Approach 2 units	PHC5109 Regulatory and Safety Sciences for Medical Devices 2 units	PHC5110 Regulatory application of New Approach Methodologies (NAMs) & Next-Gen Risk Assessment 2 units		
PHC5106	Toxicology and Safety Assessment 4 units	PHC5112 Regulatory Science for Healthcare Products 2 units	PHC5111 Integrated Biorisk Preparedness for Biomedical Professionals 4 units		
		PHC5116 The Responsible In-vivo Scientist 2 units			
Semester 3					
INDUSTRY INTERNSHIP - 6 units					
PHC5002	Industry Internship <i>Students who do not secure an internship by end of Semester 1 / beginning of Semester 2 will take on the Capstone Project PHC5001</i>				6 units

Elective courses

Semester 1				
Clinical Specialisation			Translational Specialisation	
PHC5101	Clinical Trial Design and Management	4 units	PHC5106	Toxicology and Safety Assessment 4 units
PHC5102	N-of-1 Pharmacology	2 units	MDG5204	Advanced Human Pharmacology4 units
			MDG5252	Understanding IP and Patents in the Biomedical Industry 4 units
Education Specialisation			Regulatory Specialisation	
PHC5115	Neuroscience of Learning for Healthcare Educators	2 units	PHC5110	Regulatory application of New Approach Methodologies (NAMs) & Next-Gen Risk Assessment 2 units
			PHC5111	Integrated Biorisk Preparedness for Biomedical Professionals 4 units
Other Elective				
PHC5117	Seminar Series in Medical Pharmacology (<i>Available in Sem 1 & 2</i>)			2 units
Semester 2				
Clinical Specialisation			Translational Specialisation	
PHC5103	Personalized Medicines and Pharmacometrics	4 units	PHC5107	Next Generation Medicines: From Bench to Bedside 4 units
PHC5104	Pharmacovigilance & Regulatory Affairs	4 units	PHC5108	Green and Sustainable Pharmacology 2 units
PHC5105	Natural Products and Complementary Medicine	2 units	PHC5116	The Responsible In-vivo Scientist 2 units
			MDG5232	Current Practices in Biotechnology 4 units
Education Specialisation			Regulatory Specialisation	
PHC5113	Teaching Diverse Minds in Healthcare Education	4 units	PHC5109	Regulatory and Safety Sciences for Medical Devices 2 units
PHC5114	Transforming Your Teaching using Technology	4 units	PHC5112	Regulatory Science for Healthcare Products 2 units
			PHC5116	The Responsible In-vivo Scientist 2 units
Other Elective				
PHC5117	Seminar Series in Medical Pharmacology (<i>Available in Sem 1 & 2</i>)			2 units
PHC5118	AI in Medical Pharmacology			2 units

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For more information about the programme, please visit our [webpage](#)
or contact us via email at mscphc@nus.edu.sg