

PROGRAMME HANDBOOK

Doctor of Philosophy Program in

Pharmacy and Health Innovation

(International Program)

School of Pharmacy

Walailak University

Nakhon Si Thammarat, Thailand

Curriculum B.E. 2568 (2025) — Revised

1. Programme Overview

Programme Title	Doctor of Philosophy Program in Pharmacy and Health Innovation (International Program)
Degree Awarded	Doctor of Philosophy (Pharmacy and Health Innovation)
Abbreviation	Ph.D. (Pharmacy and Health Innovation)
Field of Study	Pharmacy and Health Innovation
Offering School	School of Pharmacy, Walailak University
Location	Walailak University, Nakhon Si Thammarat, Thailand
Language of Instruction	Thai and English; thesis must be written in English
Academic Calendar	Semester 1: June – October Semester 2: November – May
Curriculum Version	Revised Curriculum B.E. 2568 (2025)

Plan 1.1 — From Master's Degree

3 Academic Years · 48 Credits

Fast-track doctoral path for M.Sc. graduates

Plan 1.2 — From Bachelor's Degree

4 Academic Years · 72 Credits

Integrated doctoral path for B.Sc. graduates

2. About the Programme

The Doctor of Philosophy Program in Pharmacy and Health Innovation at Walailak University is a research-intensive doctoral programme designed to produce high-calibre graduates with advanced expertise, original research capability, and academic leadership in pharmaceutical and health innovation.

The programme trains doctoral researchers to design and execute independent research that generates genuinely new scientific knowledge, and to translate that knowledge into innovations for commercial or social benefit. It is built on a foundation of rigorous research ethics, international academic communication, and the responsible application of advanced pharmaceutical and health science methodologies.

The programme is aligned with the Thai national doctoral standards (TQF Level 8), the AUN-QA framework, the Walailak University Quality Assurance system (WUQA-P), and Thailand 4.0 national policy. Graduates join a distinguished group of doctoral scholars from Walailak University — a research university ranked third in Thailand for Research Quality and International Outlook (THE World University Rankings 2026).

2.1 Programme Philosophy

Philosophy

The programme aims to produce doctoral graduates with knowledge, skills, and the ability to integrate pharmaceutical and health sciences to develop innovations — grounded in researcher ethics — and to apply knowledge to solve health science problems, translating research into commercial or social benefit.

2.2 Programme Objectives

- Produce doctoral graduates with deep knowledge, skills, and research expertise in pharmaceutical and health innovation, responsive to national and international workforce needs.
- Generate high-quality international-level research to solve problems in pharmacy and the health sciences, promoting translation to commercial or social use.
- Strengthen academic and research capacity within the School of Pharmacy.
- Produce graduates meeting the four-domain national doctoral qualifications: Knowledge, Skills, Ethics, and Personal Attributes.

3. Programme Learning Outcomes (PLOs)

The programme defines nine doctoral-level Programme Learning Outcomes (PLOs), formulated using Bloom's Taxonomy (cognitive domain, highest level: Creating), aligned across four national standard domains:

PLO	Programme Learning Outcome	Domain	Level
PLO1	Design and execute research processes to generate new knowledge and innovations in pharmaceutical science and health sciences.	Knowledge	Creating (Bloom's)
PLO2	Integrate pharmaceutical and health science knowledge to create innovations aligned with solving problems or delivering commercial or social benefit.	Knowledge	Creating (Bloom's)
PLO3	Demonstrate skills in information retrieval and critical evaluation of research evidence.	Skills	Evaluating
PLO4	Communicate research findings through academic presentation training at national and international levels.	Skills	Applying / Creating
PLO5	Communicate academic knowledge effectively at national or international academic events.	Skills	Applying
PLO6	Apply ethical principles in all research – including plagiarism prevention, proper citation, IP rights, and freedom from misconduct.	Ethics	Applying
PLO7	Manage research activities with discipline and responsibility, completing work according to defined plans and timelines.	Personal Attributes	Evaluating
PLO8	Conduct original research with academic leadership, pursuing discovery and creation of new knowledge to advance health innovations.	Personal Attributes	Creating
PLO9	Collaborate effectively with others, fulfilling both leadership and supportive roles as the situation requires.	Personal Attributes	Applying

Doctoral-Level Distinction

Unlike the M.Sc. programme, the PhD PLOs operate at the highest taxonomy levels – **Creating (Bloom's)** – requiring graduates to produce original, validated, internationally published knowledge rather than apply or analyse existing knowledge. PLO1 and PLO2 (Knowledge domain) specifically require designing complete research processes and integrating complex knowledge for innovation creation.

4. Programme Structure

The programme is research-intensive by design. Both plans consist almost entirely of thesis research, supported by a minimal set of non-credit compulsory seminars and mandatory curriculum activities. There are no credit-bearing taught courses.

4.1 Plan 1.1 – From Master's Degree (48 Credits, 3 Years)

For applicants holding a Master's degree (or equivalent) in Pharmacy, Health Sciences, or Natural Sciences. Thesis credits span the full 48 credits, supplemented by two non-credit seminar courses and three mandatory curriculum activities.

Code	Course Title	Credits	PLOs
PHI68-841	Seminar in Pharmaceutical and Health Innovation 1	1* (0-3-2)	PLO1-9
PHI68-842	Seminar in Pharmaceutical and Health Innovation 2	1* (0-3-2)	PLO1-9
PHI68-881	Thesis (Plan 1.1)	48	PLO1-9
CGS67-901	Research Ethics and Research Planning for Graduate Study	Activity	PLO6, 7
CGS67-902	Creation of Media and Academic Presentations	Activity	PLO3, 4, 5
CGS67-903	References and Prevention of Plagiarism and Infringement in Academic Work	Activity	PLO6

* Non-credit: must achieve grade **S (Satisfactory)** to proceed to the next milestone.

4.2 Plan 1.2 – From Bachelor's Degree (72 Credits, 4 Years)

For exceptional applicants holding a Bachelor's degree who wish to complete doctoral training without a separate master's degree. Thesis credits span the full 72 credits, with the same seminar and curriculum activity requirements.

Code	Course Title	Credits	PLOs
PHI68-841	Seminar in Pharmaceutical and Health Innovation 1	1* (0-3-2)	PLO1-9
PHI68-842	Seminar in Pharmaceutical and Health Innovation 2	1* (0-3-2)	PLO1-9
PHI68-882	Thesis (Plan 1.2)	72	PLO1-9
CGS67-901	Research Ethics and Research Planning for Graduate Study	Activity	PLO6, 7
CGS67-902	Creation of Media and Academic Presentations	Activity	PLO3, 4, 5

Code	Course Title	Credits	PLOs
CGS67-903	References and Prevention of Plagiarism and Infringement in Academic Work	Activity	PLO6

4.3 Study Plans

	Semester 1 (June – October)	Semester 2 (November – May)
Plan 1.1 Year 1	PHI68-841 (Seminar 1, non-credit) PHI68-881 Thesis (8 cr) Activity: CGS67-901, CGS67-903	PHI68-881 Thesis (8 cr) Activity: CGS67-902
Plan 1.1 Year 2	PHI68-842 (Seminar 2, non-credit) PHI68-881 Thesis (8 cr)	PHI68-881 Thesis (8 cr)
Plan 1.1 Year 3	PHI68-881 Thesis (8 cr) [Qualifying Exam by end Year 1]	PHI68-881 Thesis — Defence (8 cr)
Plan 1.2 Year 1	PHI68-841 (Seminar 1, non-credit) PHI68-882 Thesis (8 cr) Activity: CGS67-901, CGS67-903	PHI68-882 Thesis (8 cr) Activity: CGS67-902
Plan 1.2 Years 2–3	PHI68-842 (Seminar 2, Year 3) PHI68-882 Thesis (8 cr)	PHI68-882 Thesis (8 cr)
Plan 1.2 Year 4	PHI68-882 Thesis (8 cr)	PHI68-882 Thesis — Defence (8 cr)

5. Course and Activity Descriptions

English descriptions are extracted from the official curriculum document (Curriculum B.E. 2568).

PHI68-841 Seminar in Pharmaceutical and Health Innovation 1 [1(0-3-2) | Non-credit | Grade: S/U]

This course is designed to develop students' skills in research, systematic literature review, and the analysis and evaluation of complex issues in pharmaceutical and health innovations. The course aims to equip students with the necessary skills for conducting in-depth research and effectively applying knowledge at an international level through hands-on practice, including critical and creative academic thinking, lifelong learning to stay up-to-date with the latest technology and knowledge from reliable sources, formulating research questions, writing citations according to international standards, engaging in discussions, presenting academic work, and writing ethical academic reports.

PHI68-842 Seminar in Pharmaceutical and Health Innovation 2 [1(0-3-2) | Non-credit | Grade: S/U | Pre-req: Seminar 1]

This course focuses on developing students' skills in critical analysis, evaluation, and creative problem-solving related to the progression of their research or thesis. Students are trained to assess the outcomes and impacts of their research, both in academic and societal contexts. The course also emphasizes the communication of health and pharmaceutical innovation ideas to secure research funding and collaboration opportunities. In addition to academic communication, students are encouraged to effectively disseminate knowledge to the public and stakeholders.

PHI68-881 Thesis (Plan 1.1) [48 Credits]

This course enables students to engage in self-study, develop their own original research topics, and advance knowledge in pharmacy and health innovation. Under the supervision of the thesis advisory committee, students conduct research using appropriate research methodology and in accordance with research ethics standards, with the aim of solving pharmaceutical and health problems, creating innovations, and generating new knowledge. Students must present their thesis work at at least one international conference, publish research in international academic journals, and write the thesis in English.

PHI68-882 Thesis (Plan 1.2) [72 Credits]

This course enables students to engage in self-study, develop their own original research topics, and advance knowledge in pharmacy and health innovation. Under the supervision of the thesis advisory committee, students conduct research using appropriate research methodology and in accordance with research ethics standards, with the aim of solving pharmaceutical and health problems, creating innovations, and generating new knowledge. Students must present their thesis work at at least one

international conference, publish research in international academic journals, and write the thesis in English.

CGS67-901 Research Ethics and Research Planning for Graduate Study [Curriculum Activity]

This activity focuses on giving students an understanding of research ethics for doctoral-level research. Content covers the principles of research ethics, ethics in conducting human research, ethics in animal research, and research planning that complies with research ethics. Students practice analyzing research ethics principles from case studies, design research plans compliant with ethical standards, and receive training to apply for IRB/IBC consideration in human and animal research.

CGS67-902 Creation of Media and Academic Presentations [Curriculum Activity]

This activity encourages students to design effective media for academic presentations and to develop oral presentation skills. It covers principles and techniques of media design and oral communication for academic information delivery, including persuasive speaking techniques. Students practice media design, oral presentation delivery, and persuasive communication using a variety of case studies. The activity also emphasizes proper citation practices in media preparation and presentation.

CGS67-903 References and Prevention of Plagiarism and Infringement in Academic Work [Curriculum Activity]

This activity focuses on equipping students with a thorough understanding of referencing and plagiarism prevention for doctoral-level research writing. Content covers the principles of proper citation, detection and prevention of plagiarism, and intellectual property infringement in academic work. Students practice citation skills in research articles, and analyze plagiarism and infringement cases from real-world case studies.

6. Qualifying Examination

The Qualifying Examination (QE) is a mandatory doctoral milestone. All PhD students must pass the QE before they are eligible to proceed to full thesis research.

Purpose of the Qualifying Examination

The QE assesses a student's readiness, capability, and scholarly potential for conducting doctoral-level original research. It evaluates depth of disciplinary knowledge, critical thinking, and the ability to formulate and defend a credible research agenda.

6.1 Format

- The QE may be in written form, oral form, or a combination of both – as determined by the Programme Committee.
- Students must complete and pass the QE within the timeline specified by the programme (typically by the end of Year 1 for Plan 1.1, and by the end of Year 2 for Plan 1.2).
- A student who fails the QE may re-sit according to the conditions set by the Graduate Studies Committee.

6.2 Doctoral Thesis Milestone Timeline

Milestone	Description	Timing (Plan 1.1)	Primary PLOs
1	Thesis supervisor confirmed & thesis topic registered	Month 1–2	PLO1, PLO8
2	Qualifying Examination passed	End of Year 1	PLO1, PLO2, PLO3
3	Thesis proposal approved by committee	Month 9–12	PLO1, PLO6, PLO7
4	IRB/IBC ethics approval obtained (if applicable)	Before data collection	PLO6
5	Data collection, analysis, and interpretation	Year 1–2	PLO1–3, PLO5, PLO7
6	International conference presentation	Year 2 (at least once)	PLO4, PLO5
7	Journal manuscript submitted/accepted (\geq 1st paper)	Year 2–3	PLO4, PLO8
8	Final thesis submission and open oral defence	End of Year 3	PLO4, PLO8, PLO9

Note: Plan 1.2 timing is extended by one year across all milestones. Both plans must present at \geq 1 international conference and write the thesis in English.

7. Admission Requirements

7.1 Plan 1.1 – For Master's Degree Holders

Applicants must satisfy ALL of the following:

- Hold a Master's degree (or equivalent) or be in the final semester of a Master's programme from an accredited institution, in Pharmacy, Health Sciences, or Natural Sciences.
- Have a cumulative GPA of at least 3.50, OR have documented research experience in the form of a publication in a recognized academic journal, or a patent/innovation record.
- Demonstrate English proficiency meeting the Graduate School's requirements (see section 7.3).
- Not have been expelled from graduate studies for academic misconduct.
- Receive approval from the Graduate Studies Programme Committee.

7.2 Plan 1.2 – For Bachelor's Degree Holders

Applicants must satisfy at least ONE of the following academic criteria, plus the general requirements:

- Hold a Bachelor's degree (or equivalent) from an accredited institution in Pharmacy, Health Sciences, or Natural Sciences with a cumulative GPA of at least 3.50.
- Hold a Bachelor's degree and be supported by a scholarship or research grant (subject to the grant's specific conditions).
- Hold a Bachelor's degree and have documented research experience: a publication in a recognized academic journal, or a patent record.

All Plan 1.2 applicants must also meet the English proficiency requirement (Section 7.3) and receive Programme Committee approval.

7.3 English Proficiency Requirement

Accepted English Proficiency Qualifications (any one)

- IELTS: ≥ 5.0
- TOEFL: ≥ 500 (paper-based) or equivalent
- WU-TEP (Walailak University Test of English Proficiency): ≥ 63
- CEFR: B1 or above
- Other internationally recognised English proficiency test at equivalent level

7.4 Admission Procedure

Step 1	Submit online application through the WU Graduate School website (grad.wu.ac.th) with all supporting documents
Step 2	Document screening and eligibility verification by the Programme Admission Subcommittee
Step 3	Academic interview and evaluation of research proposal by the Programme Committee
Step 4	Composite scoring and submission of recommendations to the Graduate School for approval
Step 5	Official admission announcement and notification via email; enrollment and supervisor assignment

8. Graduation Requirements

To be eligible for graduation, doctoral students must satisfy ALL of the following requirements:

1	Pass the Qualifying Examination — a prerequisite for formal doctoral candidacy and thesis research.
2	Submit the complete doctoral thesis.
3	Pass the final oral thesis defence examination, conducted as an open-attendance event by a committee appointed by the Graduate Studies Board. The examination criteria include demonstration of original contribution, initiation of new knowledge, and scholarly depth.
4	Publication requirement — thesis results (or a substantial portion) must be published or formally accepted for publication in international academic journals, or an equivalent output as follows:
4a	Plan 1.1 (from Master's): At least 2 international journal publications, OR at least 1 international journal publication + 1 patent / innovative work with commercial, social, or economic impact.
4b	Plan 1.2 (from Bachelor's): At least 1 international journal publication, OR 1 patent / innovative work with recognized impact.
5	Present research at at least 1 national or international academic conference during the thesis period.
6	Write and submit the thesis in English.
7	Pass all English language proficiency requirements as set by the Graduate Studies Committee.
8	Complete all plagiarism and research ethics compliance checks.

Publication Standard

Publications must appear in recognized international academic journals. The programme benchmark is a journal indexed in **Scopus or ISI Web of Science** at Q1 or Q2 tier or equivalent. Innovative works accepted in lieu of the second publication (Plan 1.1) must be independently evaluated by ≥ 3 external experts and approved by the University Council.

9. Research Specializations

Doctoral candidates conduct original research under the supervision of School of Pharmacy faculty, organized into six research clusters. All supervisors hold a PhD and are certified under the UK Professional Standards Framework (UKPSF).

Drug Delivery & Formulation	Novel drug delivery systems, nanoparticle formulation, in situ gels, transdermal systems, targeted drug delivery, dosage form optimization, and product stability.
Natural Products & Pharmacognosy	Isolation, structural elucidation, and biological activity evaluation of bioactive compounds from Thai and regional medicinal plants; standardized herbal product development.
Pharmaceutical Chemistry & Biotechnology	Synthesis, characterization, and structure-activity relationship studies of bioactive molecules; biotechnological processes for pharmaceutical compound production.
Pharmacology & Drug Development	In vitro and in vivo pharmacological evaluation, toxicology, preclinical drug development, and mechanistic studies of pharmaceutical innovations.
Pharmaceutical Care & Clinical Pharmacy	Evidence-based clinical pharmacy practice, medication outcomes, systematic reviews, health product evaluation, regulatory science, and clinical research methodology.
Health Innovation & Digital Health	AI and machine learning applications in pharmaceutical research, big data analytics for health outcomes, digital health tools, and reproducible research using Python and R.

10. Supervision and Academic Staff

The programme maintains a supervisory pool drawn from 26 full-time faculty members across the School of Pharmacy. Key staff qualifications and supervisory standards are summarized below.

100% PhD-qualified faculty	All academic staff hold a doctoral degree — the minimum requirement for doctoral supervision.
UKPSF Certified	All supervisors are certified under the UK Professional Standards Framework (UKPSF) by Advance HE, ensuring international teaching and supervision standards.

Research active	Faculty maintain active international publication records, averaging >2 publications per staff per year in Scopus-indexed journals.
Staff-to-student ratio	Approximately 1:2–3, ensuring close supervisory contact and individualized mentoring.
Supervisor requirements	Main thesis supervisors must hold a PhD and have ≥5 relevant international publications; co-supervisors from other institutions must have ≥10 relevant publications (external) or ≥5 (internal).
Supervision committee	Each doctoral student has a supervision committee of at least 2 members (main supervisor + co-supervisor), with at least one member from outside the university.

11. Facilities and Research Infrastructure

11.1 Research Laboratories

Doctoral students have access to state-of-the-art analytical and biomedical laboratory infrastructure through the Research Institute for Health Sciences (RIHS) and the Centre for Drug and Cosmetics (CDC):

- HPLC-DAD/FLD (High Performance Liquid Chromatography)
- LC-MS/MS (Liquid Chromatography–Tandem Mass Spectrometry)
- GC-FID (Gas Chromatography–Flame Ionization Detector)
- Real-Time PCR and Flow Cytometer
- In Vivo Imaging System
- DSC (Differential Scanning Calorimetry) and XRD (X-ray Diffractometry)
- ICH-compliant stability chambers and GMP-standard formulation facilities
- Microbiology and bioanalytical laboratories

11.2 Digital Research Resources

- 24/7 access to major international databases: Scopus, ScienceDirect, PubMed/MEDLINE, ACS Publications, ClinicalKey, AccessPharmacy, and UpToDate.
- Remote VPN/EZProxy access for off-campus database use.
- Research data management and statistical software: SPSS, GraphPad Prism (institutional licenses in procurement), Python, R.
- Plagiarism detection (iThenticate/Turnitin) for all thesis chapters.

- AI-assisted literature review and reference management tools.

12. Student Support and Funding

12.1 Academic Support

- Dedicated supervision committee with formal monthly advisory meetings.
- Doctoral thesis milestone review system with defined annual checkpoints.
- Mandatory research ethics orientation (IRB/IBC) and plagiarism prevention training.
- Graduate seminars for research presentation and academic communication development.
- Access to the WU Graduate School thesis support fund for examination fees.

12.2 Financial Support

- Research stipend scholarships funded by the School of Pharmacy (subject to annual budget and intake).
- Conference presentation grants: full coverage of registration, travel, and accommodation for qualifying international conferences (via School scholarship or Graduate School funds).
- Research grants from national and international funding agencies (NRCT, TSRI, TRF, NSRF); faculty actively support students in grant applications.

12.3 Well-being and Professional Development

- Mental health and counseling services at the WU Smart Smile Center.
- Graduate student orientation and peer community activities.
- Access to WU co-working spaces and advanced computing facilities.
- International research collaboration opportunities through faculty research networks.

13. Career Pathways

Doctoral graduates from this programme are prepared for leadership-level careers in academia, research, and industry:

University Professor / Associate Professor / Lecturer	Academic teaching and research positions at universities and higher education institutions in Thailand and internationally.
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Principal Investigator / Senior Researcher	Lead independent research groups at research institutes, centers of excellence, or government science agencies.
Pharmaceutical Science Consultant	High-level advisory roles in regulatory science, drug policy, product innovation, or clinical research (public or private sector).
R&D Director / Chief Scientific Officer	Leadership positions in pharmaceutical, biotechnology, cosmetic, and health product companies.
Patent Holder / Start-up Founder	Commercialize doctoral research outputs through patent licensing, technology transfer, or entrepreneurial ventures.
Regulatory Affairs Specialist	Senior specialist roles at national drug regulatory authorities (FDA, MOPH) or international regulatory bodies.
Digital Health Researcher	Lead AI and data-driven health research programs, health analytics platforms, and digital pharmaceutical innovation.

14. Contact and Further Information

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Website: <https://pharmacy.wu.ac.th>

Graduate School: <https://grad.wu.ac.th>

Facebook: School of Pharmacy WU (SPM)

Admissions Enquiries

Applications are submitted online through the WU Graduate School website. The programme admits up to 10 students per year (5 per plan). Admission rounds typically open from March–April for Semester 1 intake commencing June. For international students, please contact the Graduate School for visa documentation and accommodation guidance.

Prospective applicants are strongly encouraged to contact a potential supervisor within their research interest area before applying, as a research proposal aligned with faculty expertise strengthens the application.