



MAHSA
UNIVERSITY

$$E=MC^2$$



**PHD IN
PHARMACY**

FACULTY OF PHARMACY



The Faculty of Pharmacy, MAHSA University is offering a postgraduate programme leading to PhD in Pharmacy (N/727/8/0049) (MQA/PA3093) by research only. The degree will be awarded on the successful examination of a thesis based on original research. The faculty offers a wide choice of research areas (see Programme Outline). There is a coursework component to this degree, consisting of a Research Methodology unit of study, but by no means is it a major component.

The research areas are:

- Medicinal Chemistry
- Dosage Form Design
- Scientific Basis of Therapeutics
- Pharmacognosy
- Pharmacy Practice
- Pharmaceutical Microbiology
- Clinical Pharmacy

PROGRAMME

Outline



1 MEDICINAL CHEMISTRY

Synthesis & characterization of biological active New Chemical Entities bearing five or six member heterocyclic ring system; Pharmacological Evaluation of any synthesized compounds; Isolation & characterization of active constituent in the plant origin; Development of Analytical methods for the API's & Dosage Forms; Toxicological studies; Stability study of herbal preparation; HPLC analysis of pharmaceutical and biological sample; Identifying new chemical entity for chemoprevention and cancer therapy; Molecular modeling and analyzing interactions of ligand on the receptor binding sites; Toxicological Profiling of Non-allopathic preparations; HPLC Method development for Drugs and other toxic agents; Natural product analysis.

2 PHARMACOGNOSY

Phytochemical screening of medicinal plants; Isolation, Phytochemical screening, characterisation and pharmacological screening of anti-hyperglycemic activity, hepatoprotective activity; cytotoxicity assessment of medicinal plants belonging to the species: Pereskia, Ximenia, Syxygium, and Synsepalum.

3 PHARMACEUTICAL MICROBIOLOGY

Screening of plant extract from Malaysian herbs for its antimicrobial and anticancer activity; Isolation and identification of indoor microorganisms isolated from a building.

4 DOSAGE FORM DESIGN

Natural product analysis; Transdermal drug delivery; In vitro skin permeation cells (Franz' diffusion cell); Instrumentation analysis; development and validations (UV spectrometry, GC, RP- HPLC etc); Cosmeceutical; Pharmaceutical technology (product development); Product analysis- formulation developments and evaluation, disintegration, dissolution; Preformulation (drug development feasibility with new molecules; physico-chemical characterization; solubility and stability assessment and improvement; polymorphism; drug-drug and drug-exciptent compatibility; data for new drug applications (IND and NDA)); Conventional and Novel Delivery Systems (including patentable non-infringing platform technologies: nanotechnology (lipid nanospheres, nanoemulsion and solid lipid nanoparticles) for anticancer drug delivery and tumour targeting; vaginal and rectal microbicides and anti-infectives including film, tablet, capsule, gel, cream, and foam formulations; solid, semisolid and liquid dosage forms; implants and conducting polymers; taste masking and mouth dissolving preparations; bioadhesive preparations for buccal and vaginal administration; extemporaneous compounding; complementary medicines; cosmetics; osmotic and matrix oral delivery systems; brand v/s generic products comparison and development); Novel Veterinary Formulations (including drug combinations and extended release preparations); Herbal preparations, Probiotics; Development of new pharmaceutical excipients; Oral controlled drug delivery systems of natural and synthetic polymers.

5 PHARMACY PRACTICE

Pharmacy Practice, Pharmacoepidemiology, Communication, Social Pharmacy, Pharmacy Management; Health Related Quality of Life measurements and analysis; Pharmacoeconomics; Pharmacoinformatics; Community pharmacy practices; Smoking Cessation Research; Managing Minor Skin Ailments in Community Pharmacy; Health Counsel-ling; Awareness of Drug Usage and Medication in community; Behavioural Medication Usage Study.

6 CLINICAL PHARMACY

Pharmacists' participation in the care of patients; Medicine Therapy Management (diabetics, cardiovascular, warfarin management); Chemotherapy Drug Management; ICU Drug Management; Paediatric Drug Management; Pharmacoeconomics; Behavioural Medication Usage Study.

7 SCIENTIFIC BASIS OF THERAPEUTICS

Transposon-mediated mutagenesis, PCR-directed mutagenesis, egfp-gene tagging, fluorescence microscopy, gene cloning, PCR, RT-PCR, phospholipid extraction & TLC, Southern blot, disc diffusion assay, chemical synthesis, NMR, bioinformatics and molecular modelling (virtual screening of compound libraries, protein-ligand docking); Bio-analytical method development using HPLC; Pharmacological screening of medicinal plants; Pharmacological screening of synthetic drugs; Antimicrobial studies on medicinal plants; preclinical pharmacokinetic studies, screening for anti-psoriatic-cancer compounds using bioassay and pre-clinical experimental cancer chemotherapy.

PROGRAMME

Structure



Full Time
3-4 years



Part Time
4-7 years

Minimum period of candidature will be 30 months with a maximum of four years for students enrolled on a full-time basis. Candidates will carry out supervised research on a topic approved by the Faculty on the recommendation of the head of discipline / department, and write a thesis embodying the results of this research.

Your research at MAHSA University

Research at MAHSA University is always evolving; inspiring the active mind and providing new tools and ways of thinking that lead to innovation. A postgraduate degree is a training exercise in which the candidate acquires knowledge of research methods and experience in planning, performing and publishing research under the guidance of a supervisor. The success of that training is assessed through a thesis, which in the case of a PhD is expected to provide some evidence of originality and thereby make some significant contribution to knowledge, at least some of which is publishable.

Supervision The supervisor is that member of the academic or appropriately senior research staff, appointed to take primary responsibility for the conduct of a students' research candidature. The supervisor must be available at all stages of the candidature for advice, assistance and direction and is responsible for the progress of the candidature to the head of department and the faculty. At least one associate supervisor may also be appointed. The role of the supervisory team will change over the course of the candidature but will generally always consist: ensuring sufficient resources are available to support the candidate; providing advice about an initial research plan; ensuring that the candidate is aware of the particular research skills to be acquired and that appropriate techniques are established for gathering and analysing data; monitoring progress made within the context of the research plan; agreeing on a timetable for frequent and regular contact and acknowledging the need for periodic review of these arrangements; establishing agreed indicators of progress; providing regular and constructive feedback on written analysis and drafts; and providing sound advice about relevant administrative matters.

ENTRY

Requirements



**MASTER
DEGREE**



Recognized by the Senate of MAHSA University

**BACHELOR
DEGREE**



Minimum CGPA 3.67 registered for Masters can apply to change to a Doctorate Level provided they comply to the following requirements:
- Competent to do research at a Doctorate level
- Approved by the University Senate

Other equivalent qualifications approved by the Senate of MAHSA University

CAREER

Opportunities



Successful candidates have plenty of opportunities to work in any organisations providing healthcare services and pharmaceutical industries. It is also a foundation for the candidates to specialise in many fields of pharmacy especially those wanting to pursue a job in clinical pharmacy, research and development organisations, and of course, the teaching institutions as academicians.

MAHSA360



At MAHSA University, we provide our students with the opportunity to develop quality skills and understanding that go beyond their field of study which will prepare them for their next leap upon graduation.

MAHSA 360 is our specially designed ecosystem that works to ensure every student is nurtured and supported throughout their student journey.



MAHSA'S PASSPORT

to success



Professional Industry-Driven Education (P.R.I.D.E) is MAHSA University's specially designed education pathway that give students the best of both academic and professional certifications. Students have the opportunity to gain professional skills through various programmes from MAHSA's collaborations with internationally recognised professional bodies. P.R.I.D.E increases the employability rate of our fresh graduates and puts them on par with the rest in the professional world.

MASTERCLASS

Students of this programme are eligible to gain add-on certification in Masterclasses. There are more than fifty Masterclasses to choose from, and all are designed to further enhance the student's employability, in line with the Industrial Revolution 4.0.

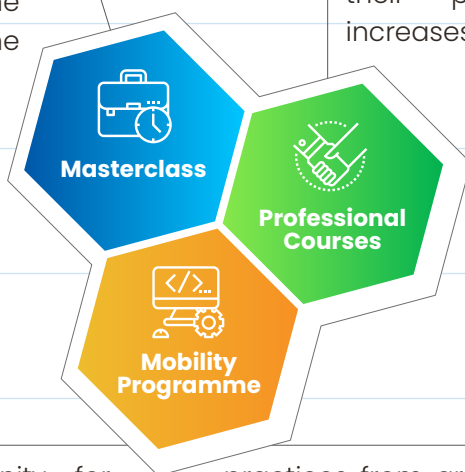
PROFESSIONAL COURSES

Through MAHSA's collaboration with internationally recognised professional bodies, students will earn certifications that will enhance their professional skills and increases their employability rate.

MOBILITY PROGRAMME

This is a unique opportunity for students to study abroad for up to one year. This programme lets students experience different cultures and

practices from around the world. Ask us about our university partners in over fifty different countries.





Library



The Habitat



Simulation Ward



Skills Laboratory



Residences



Pharmacy Lab



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