



### Bandar Saujana Putra

MAHSA's 50 acre Saujana Putra Campus has proudly seen the first phase of its introduction to the Malaysian education landscape.

The Saujana Putra Campus has a total of 1 million square-feet of buildup area with on-campus residences for all students along with a host of praise-worthy academic facilities.

These superior teaching facilities coupled with its "Green Building" design provides an optimal learning environment to produce vibrant student leaders, and an ideal, modern yet comfortable, home away from home for students, both local and international.



# MAHSA UNIVERSITY

## Master in Pharmacy

KPT/JPS(N/727/7/0045)(MQA/PA3399)10/19



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MAHSA UNIVERSITY

# MAHSA UNIVERSITY



## POSTGRADUATE DEGREE PROGRAMMES

- (by Research only)

The Faculty of Pharmacy, Mahsa University is offering postgraduate programme leading to Master In Pharmacy (N/727/7/0045) (MQA/PA 3399) 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
- Pharmacognosy
- Pharmaceutical Microbiology
- Dosage Form Design
- Pharmacy Practice
- Clinical Pharmacy
- Scientific Basis of Therapeutics



## PROGRAMME OUTLINE

The course offered is by research only – some of the research interests as below, or any research areas proposed by the candidates; or as expertise and specialisation in various field of pharmacy become available.

The research areas (these are samples only and by no means exhaustive) are:

### 1. Medicinal Chemistry

**Research interests:** 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

**Research interests:** 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, Syzygium, and Synsepalum.

### 3. Pharmaceutical Microbiology

**Research interests:** 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

**Research interests:** 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-excipient 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

**Research interests:** 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 Counselling; Awareness of Drug Usage and Medication in community; Behavioural Medication Usage Study.

### 6. Clinical Pharmacy

**Research interests:** 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

**Research interests:** 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.

## WHO IS ELIGIBLE FOR THE PROGRAMME?

### MASTER OF PHARMACY MPHARM - by research

Candidates must possess:

- Bachelor's Degree in relevant field with minimum CGPA 2.75 from universities recognized by the Senate of MAHSA University OR;
- Bachelor's Degree in relevant field with CGPA 2.50 from universities recognized by the Senate of MAHSA University can be accepted based on detailed evaluation OR;
- Bachelor's Degree in relevant pharmacy area with CGPA lower than 2.50 or its equivalent from universities recognized by the Senate of MAHSA University can be accepted with minimum 5 years working experience in the relevant field OR;

- Bachelor's degree in relevant pharmacy area with a First Class from any universities recognized by the Senate of MAHSA University OR;
  - Bachelor's degree candidates with minimum CGPA 3.57 who have registered as students may apply to convert to PhD research programme with the following conditions:
    - Have shown competency and ability to do research equivalent to PhD research programme
- AND**
- Approved by the University Senate OR
  - Other equivalent qualifications approved by the Senate of MAHSA University

## OUTLINE STRUCTURE OF THE PROGRAMME

The research programme may be taken on either a full-time or part-time basis. The duration of the MPharm programme is 2 years (or 4 semesters) for full time, and 2-4 years for part time. Minimum period of candidature will be 18 months with a maximum of two years for students enrolled on a full-time basis. For others, the minimum period of candidature is 30 months and four years maximum.

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.

## CAREER PROSPECTS

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.