# JSS Academy of Higher Education and Research, Mauritius


# Doctor of Pharmacy (Pharm D) Program Document

## June 2023

# Doctor of Pharmacy (Pharm D)

## A. Programme Aim

The aim of the programme is to provide comprehensive advanced knowledge in pharmaceutical sciences and clinical sciences in a rational, integrated and progressive manner, thus enabling graduates to be successful in the profession and provide quality medicines and quality pharmaceutical care to the society

The programme will impart advanced knowledge, skills and competencies in clinical-related pharmacy practice and outcome-based research by providing patient-oriented **pharmacy education** and training the students which enhances their ability into providing the best **pharmaceutical care to patients** and promote public health.

### Program Competencies

By achieving this aim and objectives, this Pharm D program prepares graduates to develop the following competencies;

**1. Scientific and Clinical Foundations**

**Graduates are prepared to:**

- Translate the importance of discovery and the scientific foundations of health care and apply that understanding to the practice of evidence-based care
- Understand the pathophysiology of human disease at molecular, cellular, systems, and whole organism levels
- Explain how physical, psychological, social, cultural, and environmental processes contribute to the etiology, pathogenesis, and manifestations of human health and disease
- Identify the natural history of illness and strategies for promoting health and preventing illness
- Estimate medication activity (therapeutic and toxic) at the molecular, cellular, systems, and whole organism levels
- Apply mathematical principles to therapeutic and adverse response to medications and pharmacy practice
- Apply sound scientific principles and incorporate evidence and best practices when making decisions
- Demonstrate the ability to develop and implement evidence-based programs and protocols based upon analysis of epidemiological, pharmaco-economic, and medication-use data and risk-reduction strategies

**2. Practice-Based Learning and Improvement**

Graduates are prepared to:

- Apply quality improvement principles to pharmacy practice
- Use information technology to access, evaluate and manage information and to integrate evidence from scientific studies into practice
- Demonstrate evidence-based practice, including advanced knowledge of study design and statistics, to the care of individual patients and populations
- Analyse one's own performance systematically and develop individualized plans for improvement and learning

**3. Interpersonal and Communication Skills**

Graduates are prepared to:

- Establish and maintain a collaborative and constructive pharmacist-patient relationship,
- Effectively and empathetically discuss serious, sensitive, or difficult topics with patients
- Elicit patients' needs and preferences and incorporate them into the therapeutic management plan
- Assess and validate the ability of patients and their agents to obtain, process, understand and use health- and medication-related information
- Share relevant information with patients and their agents from diverse backgrounds at a level appropriate for the individual or group
- Present information in an organized, logical fashion appropriate for the clinical situation, including assessment and plan
- Cooperate, collaborate, communicate and integrate care on inter-professional teams to ensure that care is continuous and reliable

**4. Pharmaceutical Care**

Graduates are also prepared to:

- Demonstrate knowledge of pathophysiology and pharmacotherapy of the most common disease states seen in patients in the practice setting (as listed under the respective rotation units).
- Knowledge of rational use of drugs and interpretation of laboratory investigations to aid in drug therapy decision- making.
- Demonstrate ability to retrieve and integrate patient data along with prioritizing patient problems and design suitable pharmacotherapeutic regimens for the patients.
- Demonstrate skills needed to identify, analyze and resolve drug related problems. This includes the ability to assess current drug therapy and compliance along with detection and management of drug related problems.
- Monitor patient’s drug therapy using patient-specific, drug-specific and disease specific parameters at appropriate intervals and frequencies.

- Provide concise, relevant and timely responses to requests for drug information from patients/carer, and health care professionals using appropriate literature/reference searches and reviews.
- expertise the skills needed for patient counseling according to the priority of cases.
- practice acceptable communication techniques with patients, healthcare
- professionals and other personnel in the hospital setting.
- Document pharmaceutical care activities appropriately.
- Display appropriate professional attitudes, habits, values and behavior.

**Some prominent employment opportunities are:**

- Clinical, Community, and Hospital Pharmacy Practitioner
- Toxicology Pharmacist
- Drug regulatory authority
- Drug Information Specialist
- Drug Safety Associate
- Clinical Research Coordinator / Associate / Scientist
- Academician & Researcher
- Patient Counselling Provider
- Specialist Pharmacist – Oncology, Pharmacovigilance etc.

## B. Programme Objectives

The objectives of the program are to;

- prepare competent pharmacists capable of providing high-quality pharmaceutical services and striving for excellence and innovation in patient care, research, and community wellness.
- apply scientific knowledge in pharmaceutical practice to provide optimum patient care
- demonstrate proficiency in medication management to improve health outcomes of individuals and community
- apply fundamental principles and skills in conducting pharmaceutical research
- demonstrate effective communication and collaboration in various professional settings
- practice life-long learning and demonstrate self-awareness to enhance themselves and their profession

## C. Overall Programme Learning Outcomes

The Doctor of Pharmacy programme will enable students to:

- Develop, integrate, and apply knowledge from the foundational sciences to evaluate the scientific literature, explain drug action, solve therapeutic problems, and advance population health and patient-centered care
- Provide patient-centered care as the medication expert
- Manage patient healthcare needs using human, financial, technological and physical resources to optimize the safety and efficacy of medication use systems
- Design prevention, intervention, and educational strategies for individuals and communities to manage chronic disease and improve health and wellness
- Describe how population-based care influences patient centered care and influences the development of practice guidelines and evidence based best practices
- Identify problems; explore and prioritize potential strategies; and design, implement, and evaluate a viable solution
- Educate all audiences by determining the most effective and enduring ways to impart information and assess understanding
- Assure that patients' best interests are represented
- Actively participate and engage as a healthcare team member by demonstrating mutual respect, understanding, and values to meet patient care needs
- Recognize social determinants of health to diminish disparities and inequities in access to quality care
- Effectively communicate verbally and nonverbally when interacting with an individual, group or organization
- Examine and reflect on personal knowledge, skills, abilities, beliefs, biases, motivation, and emotions that could enhance or limit personal and professional growth
- Demonstrate responsibility for creating and achieving shared goals, regardless of position
- Engage in innovative activities by using creative thinking to envision better ways of accomplishing professional goals
- Exhibit behaviours and values that are consistent with the trust given to the profession by patients, other healthcare providers and society

# D. Entry Requirements

## D.1 Mauritian Nationality

### D.1.1 General Entry Requirements

JSSAHERM will follow the admission requirements of Higher Education Commission (HEC) for tertiary education level program. The Faculty of Health Sciences, on a case-to-case basis, will make admission decisions.

Candidates must have:

Either

(i) Pass in 3 Subjects at A-level and 1 subject at subsidiary level of Higher School Certificate

Examination;

Or

(ii) Pass in 3 Subjects at A-level at the London General Certificate Examination;

Or

(iii) A qualification equivalent to the above

### D.1.2 As per the Pharmacy Council Act 2015

Any person who applies for registration as pharmacist or preregistration trainee, after having completed a degree, diploma or equivalent qualification in the field of Pharmacy, should produce a certificate stating that he has passed at one sitting any three subjects at Advanced (A) level or its equivalent, with a minimum of 21 Points, based on the regulations of the Pharmacy Council of Mauritius which is "As per Section 18(1)(b) of the Pharmacy Council Act 2015, the entry requirements for the B Pharm must be any 3 subjects at Advanced ('A') level (or its equivalent), with minimum of 21 points at one sitting"

## D.2 Overseas Candidates

For foreign candidates the entry requirement should be as prescribed by the Pharmacy Council of the home country of the prospective student.

Overseas candidates whose first language is not English and who do not hold a degree or equivalent professional qualification taught in English will be required to produce evidence of their competence in English.

## Fees Structure

The extract of fee structure and breakdown refund policy are given below;

| Programme | Duration (Years) | Tuition Fee per annum (MUR) | USD |
|---|---|---|---|
| Doctor of Pharmacy (PharmD) | FT – 6<br>PT - 3 | 2,50,000 | 6,000 |

| Other Fees | Refund Policy | Amount (MUR) |
|---|---|---|
| Application Fees | Non-refundable | 1,000 |
| Registration Fees | Non-refundable | 5,000 |
| Administrative Fees | Non-refundable | 5,000 per annum |
| Library Fees | Non-refundable | 5,000 per annum |
| Library Deposit | Refundable | 5,000 |
| Laboratory Fees | Non-refundable | 5,000 per annum |
| Examination Fees | Non-refundable | 5,000 per annum |
| Marks card fees | Non-refundable | 1,000 per annum |
| Convocation Fees | Non-refundable | 2,000 |
| Examination Resit Fees | Non-refundable | 2,000 per paper for Theory and 2,500 per paper for Practical |
| Sports Fees | Non-refundable | 1,000 per annum |

## Hostel Fees:

| | | |
|---|---|---|
| Accommodation Charges | Non-refundable | 45,000 per annum |
| Food Charges | Non-refundable | 40,000 per annum |
| Caution Deposit | Refundable | 15,000 One Off |

### D.3 Program Entry Requirements prescribed by JSSAHERM

'A' level in any science subject as approved by Board of Studies

### D.4 Students with B Pharm degree

Students with B Pharm degree may be allowed to join Year 4 on the programme.

Students with B Pharm having a minimum of 5 years working experience as a Pharmacist may also be considered for exemptions for a maximum of 8 modules depending on their RPL/RPEL as decided by the Board of Studies along the lines of the Guidelines for the post-graduate pharmacy education provided by HEC.

### D.5 Students with M Pharm degree

Students with M Pharm may be allowed to join Year 4 on the programme. Such Students may be granted additional exemptions for a maximum of 8 Modules depending on their previous qualifications and as decided by the Board of Studies. **No Exemption will be allowed for the Modules Dissertation, Clerkship and Internship.**

## E. Attendance Requirement

The students must secure a minimum of 80% attendance in each subject to become eligible to take term end examination. All students must attend every lecture, tutorial and practical classes except for approved leave like medical emergencies etc., Each module of the semester shall be treated as a separate unit for calculation of the attendance. A student, who does not satisfy the attendance requirement, mentioned as above, shall not be eligible to appear for the examination of that semester.

## F. Student Progress and Assessment

1. The evaluation of performance of the student is based on the marks obtained in each module. Semester Grade Point Average (SGPA) and Cumulative Grade Point Average (CGPA) are calculated to determine their final awards at the end of their programme of study.
2. Modules are assessed through written examinations of duration of 3 hours.
3. All modules are normally assessed over 100 marks, except for project/dissertation which will be assessed over 200 marks.
4. The overall pass mark for a module shall be 50%, subject to the students submitting their continuous assessment within set deadlines.
5. All modules must be passed in the examinations, coursework and other forms of assessment.

The modules will be assessed as follows:

- End semester examinations contributing to 70% of the total marks for theory and 60% for practical
- Continuous Internal assessment carrying 30% of total marks for theory and 40 % for practical of total marks. Continuous assessment can be based on attendance, national/international conference attended by the students, research/review papers published in indexed journal and other activities
- In order to pass in a module, a minimum of 50% should be attained in:
    - Continuous Internal assessment, and in
    - End semester examination

**Scheme for internal assessments and end semester examinations**

| Subject | Assessment | | | | End Semester Exams | | Total Marks |
|---|---|---|---|---|---|---|---|
| | Continuous Mode | Sessional Exams | | Total | Marks | Duration | |
| | | Marks | Duration | | | | |
| Theory | 10 | 20 | 1 Hr | 30 | 70 | 3 Hrs | 100 |
| Practical | 10 | 30 | 4 Hrs | 40 | 60 | 4 Hrs | 100 |

**Letter grades and grade points allocations:**

Awardclassifications shall be based on the performance of each candidate in examinations/coursework as determined by the Academic Council.

Based on the performances, each student shall be awardeda final letter grade at the end of the semester for each course as given below:

| Undergraduate/ Postgraduate | | |
|---|---|---|
| Overall Marks | Grade | Remarks |
| 90≤X≤100 | O | Outstanding |
| 80≤X <90 | A | Excellent |
| 70 ≤X <80 | B | Very Good |
| 60≤X <70 | C | Good |
| 50≤X <60 | D | Satisfactory |
| X <50 | F | Failed |

## G. Award Classification

The class shall be awarded on the basis of CGPA as follows:

| Classification of Award | CGPA |
|---|---|
| Distinction | 8.00 andabove |
| Merit | 7.00 to 7.99 |
| Pass | 6.00 to 6.99 |
| No Award | less than 6.00 |

## H. Dissertation

To allow the student to develop data collection and reporting skills in the area of Pharmaceutical Sciences and Pharmacy Practice a dissertation work shall be carried out under the supervision of a teacher. The dissertation topic must be approved by the Head of the Department or Dean. The same shall be announced to students within one month of the commencement of the fifth-year classes of Pharm.D. Dissertation work shall be presented in a written report and as a presentation at viva voce at the end of the year. External and internal examiners shall do the assessment of the dissertation work.

The dissertation work shall comprise of objectives of the work, methodology, results, discussions and conclusions. The dissertation should be around 5000-10000 words and have to be defended in a *viva-voce*.

The dissertation shall be evaluated as per the criteria given below;

**Semester IX**

| Dimensions | Percentage of Marks |
|---|---|
| **Identification of the problem** | **15** |
| **Literature Search** | **05** |
| **Aims and Scope** | **10** |
| **Objectives of the work** | **15** |
| **The novelty of the work** | **20** |
| **Methodology to be adopted** | **25** |
| **Question and Answers** | **10** |
| **Total** | **100** |

**Semester X**

| Dimensions | Percentage of Marks |
|---|---|
| **Achievement of Objective(s)** | **15** |
| **Methodology** | **15** |
| **Results and Discussions** | **20** |
| **Conclusions and Outcomes** | **15** |
| **Question and answer skills** | **10** |

| | |
|---|---|
| **Presentation of work** | **15** |
| **Communication skills** | **10** |
| **Total** | **100** |

## I. Pharmacy/Drug Store, Hospital and Clinical Posting

Every student shall be posted in a hospital / clinic for a period of not less than fifty hours to be covered in not less than 200 working days in each of second, third- & fourth-year course of Pharm.D. Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed.

## J. Clerkship

Clerkship is an organized, directed, post-graduate training program in a defined area of pharmacy practice, which is to be carried out under the supervision of a well-trained preceptors who have expertise knowledge in drug therapy and clinical skills for better patient care. Clerkship aims to provide students with a practical and stimulating learning experience where they are given an opportunity to participate in various Pharmacy Practice and patient care activities along with the health care team and provide a wide variety of clinical services. In the fifth year, every student shall spend half a day attending clinical services on daily basis as a part of a clerkship.

The oral examination shall be conducted after the completion of the clerkship of students. Students may be asked to present the allotted medical cases, specific diseases & drugs followed by a discussion. Students' capabilities in delivering clinical pharmacy services, pharmaceutical care planning, and knowledge of therapeutics shall be assessed.

## K. Internship

Internship is a phase of training wherein a student is expected to conduct actual practice of pharmacy and healthcare and acquires skills under the supervision so that he or she may become capable of functioning independently. Every student has to undergo one-year internship.

Student should independently provide the clinical pharmacy services to the allotted wards.

i) Six months in General Medicine department, and

ii) Two months each in three other specialty departments

**Specific objectives:**

- To provide patient care in cooperation with patients, prescribers, and other members of an inter professional healthcare team based upon sound therapeutic principles and evidence-based data, taking into account relevant legal, ethical, social cultural, economic, and professional issues, emerging technologies, and evolving biomedical,

pharmaceutical, social or behavioural or administrative, and clinical sciences that may impact therapeutic outcomes.

- To manage and use resources of the healthcare system, in cooperation with patients, prescribers, other healthcare providers, and administrative and supportive personnel, to promote health; to provide, assess, and coordinate safe, accurate, and time- sensitive medication distribution; and to improve therapeutic outcomes of medication use.
- To promote health improvement, wellness, and disease prevention in co-operation with patients, communities, at-risk population, and other members of an inter professional team of healthcare providers.
- To demonstrate skills in monitoring of the national health programmes and schemes oriented to provide preventive and promotive healthcare services to the community.
- To develop leadership qualities to function effectively as a member of the healthcare team organised to deliver the health and family welfare services in existing socio-economic, political and cultural environment.
- To communicate effectively with patients and the community.

**Assessment of Internship:**

- The intern shall maintain a record of work which is to be verified and certified by the preceptor (teacher/practioner) under whom he/she works. Apart from scrutiny of the record of work, assessment and evaluation of training shall be undertaken by an objective approach using situation tests in knowledge, skills and attitude during and at the end of the training. Based on the record of work and date of evaluation, the Dean shall issue certificate of satisfactory completion of training, following which the university shall award the degree or declare him/her eligible for it.
- Satisfactory completion of internship shall be determined on the basis of the following:-
    - Proficiency of knowledge required for each case management
    - The competency in skills expected for providing Clinical Pharmacy Services
    - Responsibility, punctuality, work-up of case, involvement in patient care
    - Ability to work in a team (Behaviour with other healthcare professionals including medical doctors, nursing staff and colleagues)
    - Initiative, participation in discussions, research aptitude

| Poor | Fair | Below | Average | Above Average | Excellent |
|---|---|---|---|---|---|
| 0 | 1 | 2 | 3 | 4 | 5 |

A Score of less than 3 in any of above items will represent unsatisfactory completion of internship.

# L. Programme Structure

## Doctor of Pharmacy (Pharm D) – Full-Time

The Pharm D is a 6-year (12 semesters) programme. The first 2 years are common with the B Pharm programme as per the IMC (set up by HEC) recommendation for the B Pharm programme accreditation.

| YEAR 1 (Level 1) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Semester 1* | | | | | *Semester 2* | | | | |
| **Code** | **Modules** | **Hrs/Wk** | | **Credits** | **Code** | **Modules** | **Hrs/Wk** | | **Credits** |
| | | **T** | **P** | | | | **T** | **P** | |
| PHD101T | Human Anatomy and Physiology I – Theory | 4 | - | 4 | PHD201T | Human Anatomy and Physiology II – Theory | 4 | | 4 |
| PHD102T | Pharmaceutical Analysis I – Theory | 4 | - | 4 | PHD202T | Pharmaceutical Organic Chemistry I – Theory | 4 | | 4 |
| PHD103T | Pharmaceutics I – Theory | 4 | - | 4 | PHD203T | Biochemistry – Theory | 4 | | 4 |
| PHD104T | Pharmaceutical Inorganic Chemistry – Theory | 4 | - | 4 | PHD204T | Pathophysiology – Theory | 4 | | 4 |
| PHD105T | Communication skills – Theory | 2 | - | 2 | PHD205T | Computer Applications in Pharmacy – Theory | 3 | | 3 |
| PHD107P | Human Anatomy and Physiology – Practical | - | 4 | 2 | PHD206P | Human Anatomy and Physiology II – Practical | - | 4 | 2 |
| PHD108P | Pharmaceutical Analysis I – Practical | - | 4 | 2 | PHD207P | Pharmaceutical Organic Chemistry I– Practical | - | 4 | 2 |
| PHD109P | Pharmaceutics I – Practical | - | 4 | 2 | PHD208P | Biochemistry – Practical | - | 4 | 2 |
| PHD110P | Pharmaceutical Inorganic Chemistry – Practical | - | 4 | 2 | PHD209P | Computer Applications in Pharmacy – Practical | - | 2 | 1 |
| PHD111P | Communication skills – Practical | - | 2 | 1 | | | | | |
| | | **Total** | | **27** | | | **Total** | | **26** |

| YEAR 2 (Level 2) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Semester 1* | | | | | *Semester 2* | | | | |
| **Code** | **Modules** | **Hrs/Wk** | | **Credits** | **Code** | **Modules** | **Hrs/Wk** | | **Credits** |
| | | **T** | **P** | | | | **T** | **P** | |
| PHD301T | Pharmaceutical Organic Chemistry II – Theory | 4 | - | 4 | PHD401T | Pharmaceutical Organic Chemistry III – Theory | 4 | - | 4 |
| PHD302T | Industrial Pharmacy - I– Theory | 4 | - | 4 | PHD402T | Medicinal Chemistry I – Theory | 4 | - | 4 |
| PHD303T | Pharmaceutical Microbiology – Theory | 4 | - | 4 | PHD403T | Pharmacology I – Theory | 4 | - | 4 |
| PHD304T | Pharmaceutical Jurisprudence – Theory | 4 | - | 4 | PHD404T | Pharmacognosy and Phytochemistry I – Theory | 4 | - | 4 |
| PHD305P | Pharmaceutical Organic Chemistry II – Practical | - | 4 | 2 | PHD405T | Community Pharmacy – Theory | 4 | - | 4 |
| PHD306P | Industrial Pharmacy - I – Practical | - | 4 | 2 | PHD406P | Medicinal Chemistry I – Practical | - | 4 | 2 |
| PHD307P | Pharmaceutical Microbiology – Practical | - | 4 | 2 | PHD407P | Pharmacology I – Practical | - | 4 | 2 |
| | | | | | PHD408P | Pharmacognosy and Phytochemistry I – Practical | - | 4 | 4 |
| | | **Total** | | **22** | | | **Total** | | **26** |

| YEAR 3 (Level 3) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Semester 1* | | | | | *Semester 2* | | | | |
| **Code** | **Modules** | **Hrs/Wk** | | **Credits** | **Code** | **Modules** | **Hrs/Wk** | | **Credits** |
| | | **T** | **P** | | | | **T** | **P** | |
| PHD501T | Medicinal Chemistry II – Theory | 4 | - | 4 | PHD601T | Medicinal Chemistry III – Theory | 4 | - | 4 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PHD502T | Pharmacotherapeutics - I - Theory | 4 | - | 4 | PHD602T | Pharmacology III – Theory | 4 | - | 4 |
| PHD503T | Pharmacology II – Theory | 4 | - | 4 | PHD603T | Biopharmaceutics and Pharmacokinetics – Theory | 4 | - | 4 |
| PHD504T | Pharmacognosy and Phytochemistry II – Theory | 4 | - | 4 | PHD604T | Pharmacotherapeutics - II – Theory | 4 | - | 4 |
| PHD505P | Pharmacotherapeutics - I - Practical | - | 4 | 2 | PHD605P | Medicinal chemistry III – Practical | - | 4 | 2 |
| PHD506P | Pharmacology II – Practical | - | 4 | 2 | PHD606P | Pharmacology III – Practical | - | 4 | 2 |
| PHD507P | Pharmacognosy and Phytochemistry II – Practical | - | 4 | 2 | PHD607P | Biopharmaceutics and Pharmacokinetics – Practical | - | 4 | 2 |
| | | | | | PHD608P | Pharmacotherapeutics - II - Practical | - | | 2 |
| | | **Total** | | **22** | | | **Total** | | **24** |

| **YEAR 4 (Level 4)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Semester 1*** | | | | | ***Semester 2*** | | | | |
| **Code** | **Modules** | **Hrs/Wk** | | **Credits** | **Code** | **Modules** | **Hrs/Wk** | | **Credits** |
| | | **T** | **P** | | | | **T** | **P** | |
| PHD701T | Pharmacotherapeutics - III - Theory | 4 | - | 4 | PHD801T | Biostatistics and Research Methodology | 4 | - | 4 |
| PHD702T | Hospital Pharmacy - Theory | 4 | - | 4 | PHD802T | Social and Preventive Pharmacy | 4 | - | 4 |
| PHD703T | Clinical Pharmacy - Theory | 4 | - | 4 | PHD803T | Pharmacotherapeutics IV | 4 | - | 4 |
| PHD704T | Clinical Toxicology - Theory | 4 | - | 4 | - | Elective 1 | 4 | - | 4 |
| PHD705P | Pharmacotherapeutics - III - Practical | - | 4 | 2 | - | Elective 2 | 4 | - | 4 |
| PHD706P | Hospital Pharmacy - Practical | - | 4 | 2 | | | | | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| PHD707P | Clinical Pharmacy - Practical | - | 4 | 2 | | | | | |
| | | | **Total** | **22** | | | | **Total** | **20** |

| **YEAR 5 (Level 5)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Semester 1*** | | | | | ***Semester 2*** | | | | |
| **Code** | **Modules** | **Hrs/Wk** | | **Credits** | **Code** | **Modules** | **Hrs/Wk** | | **Credits** |
| | | **T** | **C/D** | | | | **T** | **C/D** | |
| PHD901T | Clinical Research – I- Theory | 4 | - | 4 | PHD1001T | Clinical Research – II- Theory | 4 | | 4 |
| PHD902T | Pharmacoepidemiology - Theory | 4 | - | 4 | PHD1002T | Pharmacoeconomics – - Theory | 4 | | 4 |
| PHD903T | Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring - Theory | 4 | - | 4 | PHD1003C | Clerkship | - | 8 | 2 |
| PHD904C | Clerkship | - | 8 | 2 | PHD1004D | Dissertation | - | 10 | 10 |
| PHD905D | Dissertation | - | 2 | 2 | | | | | |
| | | | **Total** | **16** | | | | **Total** | **20** |

| **YEAR 6 (Level 6)** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ***Semester 1*** | | | | | ***Semester 2*** | | | | |
| **Code** | **Modules** | **Hrs/Wk** | | **Credits** | **Code** | **Modules** | **Hrs/Wk** | | **Credits** |
| PHD1101I | Internship | 30 | | 15 | PHD1201I | Internship | 30 | | 15 |
| | | | **Total** | **15** | | | | **Total** | **15** |

| List of Electives | | | |
|---|---|---|---|
| **Code** | **Modules** | **Hrs/ Wk** | **Credits** |
| PHD804ET | Pharmaceutical Marketing | 4 | 4 |
| PHD805ET | Radiopharmaceuticals | 4 | 4 |
| PHD806ET | Pharmacovigilance | 4 | 4 |
| PHD807ET | Comprehensive Immunization Delivery | 4 | 4 |
| PHD808ET | Geriatric Pharmacotherapy | 4 | 4 |
| PHD809ET | Dietary Supplements and Nutraceuticals | 4 | 4 |
| PHD810ET | Veterinary Public Health and Epidemiology | 4 | 4 |

The semester wise credit distribution is shown below:

| Total Number of Credits | |
|---|---|
| **Semester** | **No. of Credits** |
| I | 27 |
| II | 26 |
| III | 22 |
| IV | 26 |
| V | 22 |
| VI | 24 |
| VII | 22 |
| VIII | 20 |
| IX | 16 |
| X | 20 |
| XI | 15 |
| XII | 15 |
| **TOTAL** | **255** |

# Programme Structure

## Doctor of Pharmacy (Pharm D) – Part time

The part time Pharm D is for B Pharm and M Pharm degree holders only joining at year 4 of the program.

The program is Minimum 6 semesters – Maximum 8 semesters

| YEAR 1 (Level 4) | | | | | | | |
|---|---|---|---|---|---|---|---|
| ***Semester 1*** | | | | ***Semester 2*** | | | |
| **Code** | **Modules** | **Hrs/Wk** T/P | **Credits** | **Code** | **Modules** | **Hrs/Wk** T/P | **Credits** |
| PHD701T | Pharmacotherapeutics - III - Theory | 4 | 4 | PHD801T | Biostatistics and Research Methodology | 4 | 4 |
| PHD702T | Hospital Pharmacy - Theory | 4 | 4 | PHD802T | Social and Preventive Pharmacy | 4 | 4 |
| PHD705P | Pharmacotherapeutics - III - Practical | 4 | 2 | PHD803T | Pharmacotherapeutics IV - Theory | 4 | 4 |
| PHD706P | Hospital Pharmacy - Practical | 4 | 2 | - | Elective 1 | 2 | 2 |
| | | | | - | Elective 2 | 2 | 2 |
| | | **Total** | **12** | | | **Total** | **16** |

| YEAR 2 (Level 5) | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Semester 1* | | | | *Semester 2* | | | |
| **Code** | **Modules** | **Hrs/Wk** T/P | **Credits** | **Code** | **Modules** | **Hrs/Wk** T/P | **Credits** |
| PHD901T | Clinical Research – I- Theory | 4 | 4 | PHD1001T | Clinical Research – II- Theory | 4 | 4 |
| PHD902T | Pharmacoepidemiology - Theory | 4 | 4 | PHD1002T | Pharmacoeconomics – - Theory | 4 | 4 |
| PHD703T | Clinical Pharmacy - Theory | 4 | 4 | PHD903T | Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring - Theory | 4 | 4 |
| PHD707P | Clinical Pharmacy - Practical | 4 | 2 | PHD704T | Clinical Toxicology - Theory | 4 | 4 |
| PHD904C | Clerkship | 16 | 4 | PHD1003C | Clerkship | 8 | 2 |
| | | | | PHD1004D | Dissertation | 10 | 10 |
| | | **Total** | **18** | | | **Total** | **28** |

| YEAR 3 (Level 6) | | | | | | | |
|---|---|---|---|---|---|---|---|
| *Semester 1* | | | | *Semester 2* | | | |
| **Code** | **Modules** | **Hrs/Wk** T/P | **Credits** | **Code** | **Modules** | **Hrs/Wk** T/P | **Credits** |
| PHD1101I | Internship | 30 | 15 | PHD1201I | Internship | 30 | 15 |
| | | **Total** | **15** | | | **Total** | **15** |

| List of Electives | | | |
|---|---|---|---|
| **Code** | **Modules** | **Hrs/Wk** L/P | **Credits** |
| PHD804ET | Pharmaceutical Marketing | 4 | 4 |
| PHD805ET | Radiopharmaceuticals | 4 | 4 |
| PHD806ET | Pharmacovigilance | 4 | 4 |
| PHD807ET | Comprehensive Immunization Delivery | 4 | 4 |
| PHD808ET | Geriatric Pharmacotherapy | 4 | 4 |
| PHD809ET | Dietary Supplements and Nutraceuticals | 4 | 4 |
| PHD810ET | Veterinary Public Health and Epidemiology | 4 | 4 |

The semester wise credit distribution is shown below:

| **Year** | **Total Number of Credits** | |
|---|---|---|
| | **Semester** | **No. of Credits** |
| 4 | I | 12 |
| | II | 16 |
| 5 | III | 18 |
| | IV | 28 |
| 6 | V | 15 |
| | VI | 15 |
| | **TOTAL** | **104** |