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ACADEMIC REGULATIONS, CURRICULUM AND COURSE CONTENTS

EXECUTIVE ABSTRACT

The Doctor of Pharmacy (Pharm.D.) is a six-year professional doctoral program designed to produce clinically proficient pharmacists capable of delivering evidence-based patient care. The program is open to students who have completed 10+2 with science subjects and comprises five years of academic coursework followed by one year of mandatory internship or residency training in a hospital setting. Structured as a year-long, practice-integrated curriculum, the program blends pharmaceutical sciences with clinical and therapeutic knowledge, emphasizing subjects such as pharmacotherapeutics, clinical pharmacy, biopharmaceutics, pharmacokinetics, hospital and community pharmacy, clinical toxicology, pharmacovigilance, and clinical research. The program includes extensive hospital exposure, encompassing ward rounds, patient counselling, drug information services, and monitoring of adverse drug reactions, thereby equipping students with practical competencies in clinical decision-making and inter-professional collaboration.

Pharm.D. graduates are trained to function as integral members of the healthcare team, contributing to the rational use of medicines, optimization of drug therapy, and improvement of patient outcomes. They are well-prepared for careers in clinical pharmacy, hospital pharmacy, community practice, pharmacovigilance, regulatory affairs, clinical research, and academia. By shifting pharmacy education from a product-oriented to a patient-centered model, the Pharm.D. program strengthens the professional role and global recognition of pharmacists in India, aligning with contemporary healthcare needs and international standards.

1. INTRODUCTION

This document contains the academic regulations, scheme of assessments, curriculum, detailed syllabi, course contents with text / reference books recommended, course outcomes, skills expected to be acquired and the projects / assignments that are to be performed for each course for the conduct of 6-year Pharm. D. programme.

1.1. Short Title and Commencement

These regulations may be called the Pharm.D. Regulations 2024. They shall come into effect from the Academic Year 2024-25. The regulations have been formulated in accordance with the guidelines prescribed by the Pharmacy Council of India (PCI), New

Delhi, and have been accepted and recommended by the Academic Council of VFSTR in its 37th meeting held on 13-07-2024. Any modifications or amendments issued by the Pharmacy Council of India from time to time shall be adopted by VFSTR with due approval from its statutory bodies.

1.2 Program Duration

- a. The duration of the Pharm.D program shall be six academic years, comprising five years of coursework and one year of internship or residency. Each academic year shall consist of not less than two hundred working days. The six-year period is organized into two distinct phases:
 - ❖ Phase I – First to Fifth academic year – comprising didactic courses, laboratory work, and hospital training.
 - ❖ Phase II – Sixth academic year – devoted to internship or residency training, involving postings in specialized clinical units.
- b. A student shall be permitted to pursue the program for a minimum period of six academic years and a maximum period of twelve academic years from the date of admission. Failure to fulfill all academic requirements within this period shall lead to forfeiture of the seat and cancellation of admission to the Pharm.D program.
- c. Upon successful completion of the prescribed course of study and internship, the degree of Doctor of Pharmacy (Pharm. D) shall be awarded, and the candidate shall be entitled to use the prefix “Dr.” before his or her name, in accordance with Regulation 18 of the Pharm.D Regulations, 2008.

1.3. Minimum qualification for admission

Admission to the Pharm.D program shall be open to candidates who have passed any of the following examinations:

- 10+2 examination with Physics and Chemistry as compulsory courses along with Mathematics or Biology.
- (or)
- A pass in D. Pharm course from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act.
- (or)
- Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examinations.

Provided a candidate shall have completed the **age of 17 years** on or before **31st December** of the year of admission to the course. There shall be reservation of seats for candidates belonging to Scheduled Castes, Scheduled Tribes, and Other Backward Classes, in accordance with the rules prescribed by the Central Government, State Government, or Union Territory Administration as the case may be from time to time.

1.4. Pharm. D Degree

All students shall be formally and conventionally enrolled in the Pharm. D. degree programme. The award of the degree shall be made upon successful completion of all academic requirements, practical training, and internship as prescribed in the Curriculum (Annexure 1).

1.5. Content Delivery of a Course

Content delivery of a Course in the Pharm. D. Degree Program shall be through, either or all, of the following methods:

- i. **Lecture** - refers to Lecture session(s) through classroom contact session wherein students will learn by listening. Denoted by “L”.
- ii. **Tutorial** - refers to transaction(s) consisting of Participatory discussion / Seminar/ Self-study / Desk work / brief presentations by students along with such other novel methods that enable a student to efficiently & effectively absorb and assimilate the contents delivered in the lecture sessions. Denoted by “T”.
- iii. **Practice** - refers to Practice / Practical sessions and it consists of hands-on-Experience / Laboratory Experiments / Field studies / Case studies / Project/ Clerkship/ Internship that equip the students to acquire the much required skill component. Denoted by “P”.
- iv. **Hospital Posting** – refers to the clinical exposure component included in certain practical courses, where students are placed in hospital settings to observe and participate in patient care activities under supervision. Denoted by “H”.

2. CURRICULUM

Every course offered shall be represented in an L–T–P structure. The theory and practical components of a course are delivered in an integrated manner but are evaluated separately, each carrying independent sessional and end-examination components. In certain courses, the practical component may also include hospital postings or seminars as part of the prescribed mode of delivery.

2.1 Organization of Course Contents

Each academic year of the Pharm.D program is divided into three instructional sessions, designed to ensure systematic and progressive coverage of all prescribed theory and practical components. The total instructional period shall consist of not less than 200 working days, excluding vacations and examination schedules. During these instructional sessions, students engage in lectures, tutorials, laboratory work, and clinical or hospital training as applicable. Each instructional session culminates in a sessional examination to assess academic progress. Approximately 35% of the syllabus is completed by the first sessional examination, another 35% by the second, and the remaining 30% prior to the third sessional and the annual (university) examination.

Note: The specific duration and scheduling of instructional sessions shall be as per the academic calendar approved by VFSTR, ensuring adherence to the prescribed minimum instructional period.

3. CATEGORY OF COURSES

The Pharm.D. program is structured to integrate fundamental pharmaceutical sciences with applied clinical practice, ensuring a seamless transition from classroom learning to patient-centered healthcare. The curriculum is designed to provide students with a comprehensive understanding of drugs and their therapeutic applications, while developing the competencies required for professional pharmacy practice. The courses are organized into distinct categories that collectively aim to build scientific knowledge, technical proficiency, research aptitude, and clinical expertise.

3.1 Theory course

Theory courses constitute the academic component of the Pharm.D. program, aimed at providing foundational and advanced knowledge in pharmaceutical and biomedical sciences. These courses include subjects such as anatomy, physiology, pharmacology, pharmaceuticals, medicinal chemistry, and clinical pharmacy. They are designed to develop conceptual understanding, analytical reasoning, and evidence-based decision-making in healthcare. The knowledge gained from theory courses forms the intellectual base for practical laboratory training, clerkship, and patient-centered clinical practice.

3.2. Practical Course

Laboratory courses complement theory learning by enabling students to translate theoretical knowledge into practical skills. These courses train students in experimental techniques, formulation science, drug analysis, microbiological handling, and

pharmacological screening. Through systematic experimentation and record-keeping, students learn precision, scientific documentation, and analytical thinking. The laboratory component also builds competence in handling instruments, interpreting results, and ensuring quality assurance in pharmaceutical and clinical settings.

3.3 Hospital Posting and Clerkship

Hospital postings and clerkship constitute the practical component of clinical training that bridges classroom learning with healthcare practice. From the second to the fourth year, each student undergoes structured hospital postings for a minimum of fifty hours, distributed over not less than two hundred working days each year. During this period, students observe and assist in hospital pharmacy operations, prescription handling, patient counseling, and documentation under the supervision of qualified professionals.

In the fifth year, students progress to the clerkship phase, where they participate in daily ward rounds during the morning sessions and engage in case discussions, therapeutic planning, and clinical documentation. Through direct interaction with physicians, nurses, and patients, students apply pharmacotherapeutic principles, identify drug-related problems, and contribute to the optimization of therapeutic outcomes. This continuum of hospital-based learning develops clinical judgment, communication skills, and ethical responsibility essential for independent pharmacy practice.

3.4 Project work

Project work, conducted during the fifth year, allows students to explore a focused area of pharmacy practice through research and data analysis. Guided by faculty mentors, students work in small groups to investigate patient- or treatment-oriented topics such as pharmacovigilance, pharmacoepidemiology, or pharmacoeconomics. The project emphasizes data collection, critical analysis, and ethical research conduct. Through seminars and report submission, students demonstrate their ability to synthesize information, interpret findings, and communicate results effectively — skills essential for clinical research and evidence-based pharmacy practice.

3.5 Internship

Internship represents the final phase of training in which students apply their accumulated knowledge and skills in real healthcare environments. Under professional supervision, they participate in patient care, medication management, and healthcare team collaboration. The internship nurtures independent clinical decision-making, professional ethics, and leadership. It also emphasizes the student's role in promoting public health, preventive

care, and rational drug use. Through diverse hospital postings, the internship ensures that graduates emerge as competent, confident, and responsible pharmacy professionals capable of contributing effectively to the healthcare system.

4. ATTENDANCE & Eligibility for appearing Examination

It is mandatory for every student to attend the coursework in each academic year as per the approved academic schedule. VFSTR expects 100% attendance. However, a minimum of 80% attendance in each course, both in theory and practical components separately, is required to be eligible to appear for the examinations.

- a. The attendance calculations will be periodically reviewed at the end of every 4 weeks. The details of attendance status will be shared with the parents / guardian.
- b. The shortage of attendance may be condoned up to 10% on the ground of ill-health, social obligations, participating / representing in sports/cultural events, placement activities etc.
- c. Documentary evidence like medical reports and certificates issued by concerned bodies is to be produced on time as support for the attendance shortage due to ill-health. These cases are subjected to the scrutiny of a committee constituted for this purpose by the Vice-Chancellor. The decision of the committee shall be final.
- d. Prior approval has to be taken from the HoD for the other types of leaves.

5. EXAMINATION

5.1 Examination Pattern

- a. Every year there shall be an examination to examine the students.
- b. Each examination may be held twice every year. The first examination in a year shall be the annual examination and the second examination shall be supplementary examination.
- c. The examinations shall be of written and practical (including oral nature) carrying maximum marks for each part of a course as indicated as Tables in Annexure-2

5.2 Mode of Examinations

- a. Theory examination shall be of three hours and practical examination shall be of four hours' duration.
- b. A Student who fails in theory or practical examination of a course shall re-appear both in theory and practical of the same course.
- c. Practical examination shall also consist of a viva –voce (Oral) examination.
- d. Clerkship examination – Oral examination shall be conducted after the completion

of clerkship of students. An external and an internal examiner will evaluate the student. Students may be asked to present the allotted medical cases followed by discussion. Students' capabilities in delivering clinical pharmacy services, pharmaceutical care planning and knowledge of therapeutics shall be assessed.

5.3 Evaluation Pattern

Each theory and practical component carries 30 marks for sessional assessment and 70 marks for the end examination, unless otherwise specified. The detailed year-wise scheme of marks for all courses, including theory and practical components, is provided in Annexure-2 (Tables).

5.3.1 Sessional Assessment

Sessional assessment refers to the continuous internal evaluation conducted by the institution throughout the academic year to assess a student's understanding, regularity, and skill development. A minimum of three sessional examinations shall be conducted in each subject, and the average marks of the best two performances will be considered for awarding sessional marks.

5.3.1.1 Theory Components

The theory component in each course carries a maximum of 30 sessional marks, awarded through continuous internal evaluation conducted during the academic year. The distribution of marks shall be as follows:

Mode of Assessment	Weightage (Marks)
Mid Exam / Sessional Tests	15
Weekly Assignments / Class Tests	15
Total	30

Mid Exam / Sessional Tests: Three mid exams shall be conducted during the academic year, and the average of the best two performances shall be considered for evaluation. Each mid test shall comprise of 10 multiple choice questions each carries 1 mark under Part-A and five long-answer questions carrying five marks each, of which students shall attempt any four (total 20 marks) under Part-B, and the marks obtained shall be proportionately scaled down to 15.

Weekly assignments or class tests: Class tests shall be based on the topics covered during lecture (L) sessions and are designed to promote continuous learning, self-study, and engagement with the course material. Three to four such assignments shall be conducted

during each sessional period by the respective course instructor. The average of the scores obtained in these assignments shall be scaled to 15 marks, which will contribute toward the total sessional score for the theory component.

a. Practical Components

The practical component in each course carries a maximum of 30 sessional marks, awarded through periodic practical examinations and continuous evaluation during laboratory or clinical sessions. Three practical sessional examinations shall be conducted during the academic year, and the average of the best two performances shall be considered for the final evaluation. The pattern and format of each practical sessional examination shall be as prescribed under the respective course syllabus. Sessional marks for practical components shall be distributed as follows:

Criteria	Marks
Actual performance in the sessional examination	20 marks
Day to day assessment in the practical class work, promptness, viva-voce record maintenance, etc.	10 marks

Day-to-day assessment shall reflect the student's consistency, laboratory skill development, and professional conduct during practical or clinical sessions. All sessional marks shall be recorded by the respective course instructor and verified by the Head of the Department for approval at the end of each academic year.

5.3.2 End Examination Pattern

The End examination represents the summative evaluation conducted at the conclusion of each academic year to assess the student's overall comprehension, analytical ability, and application of theoretical and practical knowledge. Each theory and practical component carries a maximum of 70 marks for the end examination, unless otherwise specified. The detailed scheme of marks is provided in Annexure–2 (Tables). The end examination shall be conducted by the University as per the approved academic calendar.

5.3.2.1 Theory Component

The theory component of each course carries a maximum of 70 marks and is conducted over a duration of three hours. The examination shall assess the student's comprehensive understanding, conceptual clarity, and ability to integrate and apply knowledge across the entire syllabus. The question paper pattern for theory end examinations shall be as follows:

- i. Part A shall contain ten short questions with two questions from each Unit, each of two marks for a total of 20 marks. These short questions shall not be ‘one word’ answer type.
- ii. Part B shall consist of ten questions, with two questions from each Unit. One question from each Unit shall be answered, each carrying ten marks, for a total of 50 marks.

This structure ensures balanced coverage of the syllabus and a uniform evaluation of analytical and descriptive ability.

5.3.2.2 Practical Component

The practical component of each course carries a maximum of 70 marks and shall be conducted over a duration of four hours, unless otherwise specified in the course syllabus. Each practical examination shall be jointly conducted by one internal and one external examiner appointed by the University. Students shall maintain practical or clinical records, which must be submitted for evaluation at the time of examination. The practical examination shall include a synopsis of the experiment or case work, performance of the assigned experiment, and viva-voce. Evaluation shall emphasize the student’s technical skill, accuracy, record maintenance, interpretation of results, and professional conduct during laboratory or clinical sessions.

5.4. Project Work – Evaluation

The project work shall be carried out during the fifth year of the Pharm.D program under the supervision of a faculty member and shall be related to the area of specialization. On completion, each student shall submit a project report, which will be evaluated through seminars and a final presentation. The evaluation shall be jointly conducted by one internal and one external examiner appointed by the University.

The project work shall be carried out during the fifth year of the Pharm.D program under the supervision of a faculty member and shall be related to the area of specialization in community, hospital, or clinical pharmacy practice. The objective of the project work is to enable students to develop data collection, analysis, and reporting skills in real-world healthcare settings and to apply evidence-based approaches to pharmacy practice.

5.4.1 Objectives of Project Work

The main objectives of the project work are to:

- Demonstrate the ability to collect, analyze, and interpret data related to patient care or drug use;
- Accurately describe and record published findings of others in an impartial manner; and
- Develop competency in reporting and communication of research outcomes.

5.4.2 Methodology

- Students shall work in groups of not less than two and not more than four under the supervision of an authorized teacher.
- Each project shall be approved by the Head of the Department
- Project work shall focus on pharmacy practice in community, hospital, or clinical settings, such as drug utilization reviews, pharmacoepidemiology, pharmacovigilance, or pharmacoeconomics.
- Project work shall be approved by the institutional ethics committee;
- Students shall present three seminars — one at the beginning, one midway, and one at the end of the project period — to demonstrate progress.
- A two-page project synopsis indicating the title, objectives, methodology, anticipated benefits, and references shall be submitted to the Head of the Department or Head of the Institution for approval.

5.4.3 Report Submission

- On completion of the project, each student group shall submit a typed report of approximately 40–50 pages prepared using standard academic format and duly certified by the supervising teacher and Head of the Department.
- The report shall include sections on objectives, methodology, results, discussions, and conclusions.
- Submission of the final report shall be made at least one month prior to the commencement of annual or supplementary examinations.

5.4.4 Evaluation

The evaluation shall be jointly conducted by one internal and one external examiner appointed by the University. Students shall be evaluated in groups over a period of four hours (approximately half an hour per group of four students). Evaluation shall consist of seminar assessments and a final presentation, as detailed below.

- **Seminar Evaluation**

Students shall present a minimum of three seminars during the project period to demonstrate the progress and development of their work. Each seminar shall be evaluated for 30 marks, and the average of the best two performances shall be finalized for the award of the marks. Evaluation shall be based on the following parameters:

Table:3

Criteria	Marks
Write up of the seminar	7.5
Presentation of work	7.5
Communication skills	7.5
Question and answer skills	7.5
Total	30

The seminars aim to evaluate a student's ability to organize research content, communicate findings effectively, and respond confidently to analytical and technical questions.

- **Final Project Evaluation**

The final evaluation of the project work shall be conducted after submission of the project report. Students shall be evaluated in groups, typically over a period of four hours (approximately half an hour per group of four students). The evaluation shall focus on the scientific merit of the work, clarity of presentation, and the student's ability to defend and discuss results. Marks shall be awarded as follows:

Table:4

Criteria	Marks
Write up of the seminar	17.5
Presentation of work	17.5
Communication skills	17.5
Question and answer skills	17.5
Total	70

In cases where students undertake the same project topic as a group, differentiation in marks shall be made based on performance in presentation, communication, and question-answer interactions.

5.5 Internship

The internship is a phase of professional training in which each student engages in the actual practice of pharmacy and health care services under qualified supervision. During this period, the student is expected to apply theoretical knowledge to real-world clinical and pharmaceutical situations, develop professional competence, and acquire the

practical skills necessary to function independently as a pharmacist. Every student shall undergo a one-year compulsory internship, as prescribed in **Annexure-3** of these Regulations. The internship shall be completed in approved teaching hospitals or healthcare institutions and shall cover the areas specified in the prescribed schedule.

6. MINIMUM MARKS FOR PASSING EXAMINATION

A student shall not be declared to have passed examination unless he or she secures at least 50% marks in each of the course separately in the theory examinations, including sessional marks and at least 50% marks in each of the practical examinations including sessional marks.

7. ELIGIBILITY FOR PROMOTION TO NEXT YEAR

All students who have appeared for all the courses and passed the first-year annual examination are eligible for promotion to the second year and, so on. However, failure in more than two courses shall debar him or her from promotion to the next year classes.

8. AWARD OF CLASS

The students who have become eligible for award of degree shall be classified based on their Percentage secured, as per the Table 6 given below:

Table:6

S. No	Percentage to be secured	Class Awarded
1	$\geq 75\%$ (Without any supplementary appearance)	First class with distinction
2	$\geq 60\%$ (Without any supplementary appearance)	First class
3	$\geq 50\%$	Pass class

- For the purpose of rewarding the accomplishees with ranks and awards, toppers in each branch discipline is identified, based on their academic performance.
- In addition, the 'Chairman's gold medal' and other 'Endowment Awards' are awarded to the 'outstanding students' based on the overall performance which includes academic, co-curricular and extra-curricular activities, campus placements and competitive examinations. A committee appointed by the Vice-Chancellor will recommend the eligible student for the award, selected from the nominations received

from the departments.

- c. In addition, the institution may recognize exceptional performance such as music, dance, sports etc. and display of exceptional bravery from time to time.
- d. The candidates availing spill over semesters will not be eligible for the award of merit scholarships.
- e. The candidates availing beyond the normal duration of six academic years will not be eligible for the award of merit scholarships or academic distinctions.

9. AWARD OF DEGREE

On successful completion of prescribed requirements of the programme, the degree shall be conferred during the convocation of the VFSTR.

For the conferment of degree, the student has to fulfill the following requirements:

- a. a bonafide student and undergone the entire six academic years of study (five years of coursework and one year of internship) as prescribed under the Pharmacy Council of India regulations.
- b. successfully completed all the courses as prescribed in the respective curriculum.
- c. has fulfilled all the requirements of the program by passing separately in theory and practical components of all subjects, and by satisfactorily completing the prescribed project work and one-year internship.
- d. obtained no due certificates as prescribed by VFSTR.
- e. no in-disciplinary proceedings pending against him / her.

Consequent upon being convinced, following an enquiry, the Academic council may resolve to withdraw the degree / diploma / any other certification provided by the institute. The aggrieved may however prefer for a review of such decision by the Academic Council, citing cogent reasons for review or go in for an appeal to the, Executive council of the institute.

10. INTERPRETATION OF RULES

- a. The academic rules and regulations should be read as a whole for the purpose of any interpretation.
- b. For the matter(s) NOT covered herein above or for unforeseen circumstances, but arising during the course of the implementation of the above regulations. The Vice-Chancellor shall be authorized to remove the difficulties and decide upon the matters. The same shall be reported in the next meeting of Academic Council for ratification

and subsequently informed to Executive Council.

- c. The Institution may change or amend the academic rules and regulations or curriculum at any time, and the changes or amendments made shall be applicable to all the students with effect from the dates, notified by the Institution.
- d. Procedure and explanation to any section can be floated by the office of Dean AAA as applicable from time to time with due approval by the chairman of academic Council.

ANNEXURE-1

PHARM. D COURSE STRUCTURE

I Year:

Course Code	Title of the Course	L	T	P	C
24PD101	Human Anatomy and Physiology	3	1	0	4
24PD102	Pharmaceutics	2	1	0	3
24PD103	Medicinal Biochemistry	3	1	0	4
24PD104	Pharmaceutical Organic Chemistry	3	1	0	4
24PD105	Pharmaceutical Inorganic Chemistry	2	1	0	3
24PD106	Remedial Mathematics *	3	1	0	4
24PD107	Remedial Biology *	3	1	0	4
24PD108	Human Anatomy and Physiology Lab	0	0	3	3
24PD109	Pharmaceutics Lab	0	0	3	3
24PD110	Medicinal Biochemistry Lab	0	0	3	3
24PD111	Pharmaceutical Organic Chemistry Lab	0	0	3	3
24PD112	Pharmaceutical Inorganic Chemistry Lab	0	0	3	3
24PD113	Remedial Biology Lab *	0	0	3	3
	Total	16	6	18	40

* For Biology – 7 Cr., for Maths – 4 Cr. Only

* For Bio -40 Cr., for Mat – 37 Cr. in total for 1st year

II Year:

Course Code	Title of the Course	L	T	P	C
24PD201	Pathophysiology	3	1	0	4
24PD202	Pharmaceutical Microbiology	3	1	0	4
24PD203	Pharmacognosy & Phytopharmaceuticals	3	1	0	4
24PD204	Pharmacology-I	3	1	0	4
24PD205	Community Pharmacy	2	1	0	3
24PD206	Pharmacotherapeutics-I	3	1	0	4
24PD207	Pharmaceutical Microbiology Lab	0	0	3	3
24PD208	Pharmacognosy & Phytopharmaceuticals Lab	0	0	3	3
24PD209	Pharmacotherapeutics-I Lab	0	0	3	3
	Total	17	6	9	32

III Year:

Course Code	Title of the Course	L	T	P	C
24PD301	Pharmacology-II	3	1	0	4
24PD302	Pharmaceutical Analysis	3	1	0	4
24PD303	Pharmacotherapeutics-II	3	1	0	4
24PD304	Pharmaceutical Jurisprudence	2	0	0	2
24PD305	Medicinal Chemistry	3	1	0	4
24PD306	Pharmaceutical Formulations	2	1	0	3
24PD307	Pharmacology-II Lab	0	0	3	3
24PD308	Pharmaceutical Analysis Lab	0	0	3	3
24PD309	Pharmacotherapeutics-II Lab	0	0	3	3
24PD310	Medicinal Chemistry Lab	0	0	3	3
24PD311	Pharmaceutical Formulations Lab	0	0	3	3
	Total	16	5	15	36

IV Year:

Course Code	Title of the Course	L	T	P	C
24PD401	Pharmacotherapeutics-III	3	1	0	4
24PD402	Hospital Pharmacy	2	1	0	3
24PD403	Clinical Pharmacy	3	1	0	4
24PD404	Biostatistics & Research Methodology	2	1	0	3
24PD405	Biopharmaceutics & Pharmacokinetics	3	1	0	4
24PD406	Clinical Toxicology	2	1	0	3
24PD407	Pharmacotherapeutics-III Lab	0	0	3	3
24PD408	Hospital Pharmacy Lab	0	0	3	3
24PD409	Clinical Pharmacy Lab	0	0	3	3
24PD410	Biopharmaceutics & Pharmacokinetics Lab	0	0	3	3
	Total	15	6	12	33

V Year:

Course Code	Title of the Course	L	T	P	C
24PD501	Clinical Research	3	1	0	4
24PD502	Pharmacoepidemiology and Pharmacoeconomics	3	1	0	4
24PD503	Clinical Pharmacokinetics & Pharmacotherapeutics Drug Monitoring	2	1	0	3
24PD504	Clerkship *	0	1	0	1
24PD505	Project work (Six Months)	0	0	20	20
	Total	8	4	20	32

* Attending ward rounds on daily basis.

VI Year:

Course Code	Title of the Course	L	T	P	C
24PD601	Internship	0	0	0	40

Internship or residency training including postings in specialty units. 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 speciality departments

ANNEXURE-2**(TABLES)****I Year Examination:**

Name of Course	Maximum marks for Theory			Maximum marks for Practical's		
	End	Sessional	Total	End	Sessional	Total
Human Anatomy and Physiology	70	30	100	70	30	100
Pharmaceutics	70	30	100	70	30	100
Medicinal Biochemistry	70	30	100	70	30	100
Pharmaceutical Organic Chemistry	70	30	100	70	30	100
Pharmaceutical Inorganic Chemistry	70	30	100	70	30	100
Remedial Mathematics/ Biology	70	30	100	70*	30*	100*
			600			600 = 1200

* for Biology.

II Year Examination:

Name of Course	Maximum marks for Theory			Maximum marks for Practical's		
	End	Sessional	Total	End	Sessional	Total
Pathophysiology	70	30	100	-	-	-
Pharmaceutical Microbiology	70	30	100	70	30	100
Pharmacognosy & Phytopharmaceuticals	70	30	100	70	30	100
Pharmacology-I	70	30	100	-	-	-
Community Pharmacy	70	30	100	-	-	-
Pharmacotherapeutics-I	70	30	100	70	30	100
			600			300 = 900

III Year Examination:

Name of Course	Maximum marks for Theory			Maximum marks for Practical's		
	End	Sessional	Total	End	Sessional	Total
Pharmacology-II	70	30	100	70	30	100
Pharmaceutical Analysis	70	30	100	70	30	100
Pharmacotherapeutics-II	70	30	100	70	30	100
Pharmaceutical Jurisprudence	70	30	100	-	-	-
Medicinal Chemistry	70	30	100	70	30	100
Pharmaceutical Formulations	70	30	100	70	30	100
			600			500 = 1100

IV Year Examination:

Name of Course	Maximum marks for Theory			Maximum marks for Practical's		
	End	Sessional	Total	End	Sessional	Total
Pharmacotherapeutics-III	70	30	100	70	30	100
Hospital Pharmacy	70	30	100	70	30	100
Clinical Pharmacy	70	30	100	70	30	100
Biostatistics & Research Methodology	70	30	100	-	-	-
Biopharmaceutics & Pharmacokinetics	70	30	100	70	30	100
Clinical Toxicology	70	30	100	-	-	-
			600			400 = 1000

V Year Examination:

Name of Course	Maximum marks for Theory			Maximum marks for Practical's		
	End	Sessional	Total	End	Sessional	Total
Clinical Research	70	30	100	-	-	-
Pharmacoepidemiology and Pharmacoeconomics	70	30	100	-	-	-
Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	70	30	100	-	-	-
Clerkship *	-	-	-	70	30	100
Project work (Six Months)	-	-	-	100**	-	100
			300			200 = 500

* Attending ward rounds on daily basis.

** 30 marks – viva-voce (oral), 70 marks – Thesis work

ANNEXURE - 3

INTERNSHIP

1. SPECIFIC OBJECTIVES:

- i. To provide patient care in cooperation with patients, prescribers, and other members of an interprofessional health care 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 behavioral or administrative, and clinical sciences that may impact therapeutic outcomes.
- ii. To manage and use resources of the health care system, in cooperation with patients, prescribers, other health care 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.
- iii. To promote health improvement, wellness, and disease prevention in co-operation with patients, communities, at-risk population, and other members of an interprofessional team of health care providers.
- iv. To demonstrate skills in monitoring of the National Health Programmes and schemes, oriented to provide preventive and promotive health care services to the community.
- v. To develop leadership qualities to function effectively as a member of the health care team organised to deliver the health and family welfare services in existing socio-economic, political and cultural environment.
- vi. To communicate effectively with patients and the community.

2. OTHER DETAILS:

- i. All parts of the internship shall be done, as far as possible, in institutions in India. In case of any difficulties, the matter may be referred to the Pharmacy Council of India to be considered on merits.
- ii. Where an intern is posted to district hospital for training, there shall be a committee consisting of representatives of the college or university, and the district hospital administration, who shall regulate the training of such trainee. For such trainee a certificate of satisfactory completion of training shall be obtained from the relevant administrative authorities which shall be countersigned by the Principal or Dean of College.
- iii. Every candidate shall be required, after passing the final Pharm.D. or Pharm.D. (Post

Baccalaureate) examination as the case may be to undergo compulsory rotational internship to the satisfaction of the College authorities and University concerned for a period of twelve months so as to be eligible for the award of the degree of Pharm.D. or Pharm.D. (Post Baccalaureate) as the case may be.

3. ASSESSMENT OF INTERNSHIP:

- i. The intern shall maintain a record of work which is to be verified and certified by the preceptor (teacher practitioner) under whom he 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 or Principal shall issue certificate of satisfactory completion of training, following which the university shall award the degree or declare him eligible for it.
- ii. Satisfactory completion of internship shall be determined on the basis of the following: -
 - a. Proficiency of knowledge required for each case management SCORE 0-5
 - b. The competency in skills expected for providing Clinical Pharmacy Services SCORE 0-5
 - c. Responsibility, punctuality, work up of case, involvement in patient care SCORE 0-5
 - d. Ability to work in a team (Behavior with other healthcare professionals including medical doctors, nursing staff and colleagues). SCORE 0-5
 - e. Initiative, participation in discussions, research aptitude. SCORE 0-5

Poor	Fair	Below Average	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.