

JSS UNIVERSITY

SRI SHIVARATHREESHWARA NAGAR

MYSORE – 570 015

REGULATIONS

DOCTOR OF PHARMACY (PHARM. D) COURSE

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**DOCTOR OF PHARMACY - (POST BACCALAUREATE) COURSE
PHARM. D - PB**

2008

JSS University
Sri Shivarathreshwara Nagar
Mysore – 570 015

Pharm. D. and Pharm. D. (Post Baccalaureate)

REGULATIONS

These regulations shall be called as “The Regulations for the Pharm.D and Pharm.D. (Post Baccalaureate) Degree courses of the J.S.S. University, Mysore”. They shall come into force from the Academic Year 2008 – 2009. The regulations and syllabi framed are subject to modifications from time to time by the Academic Council.

Minimum Qualification for admission to the course

a) Pharm.D.

A pass in any of the following examinations -

- (1) 10+2 examination with Physics and Chemistry as compulsory subjects along with one of the two subjects: Mathematics or Biology.
- (2) A pass in D.Pharm course from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act.
- (3) Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examinations.
- (4) Provided that a student should complete the age of 17 years on or before 31st December of the year of admission to the course.
- (5) Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

b) Pharm.D. (Post Baccalaureate)

A pass in B.Pharm from an institution approved by the Pharmacy Council of India under section 12 of the Pharmacy Act:

Provided that there shall be reservation of seats for the students belonging to the Scheduled Castes, Scheduled Tribes and other Backward Classes in accordance with the instructions issued by the Central Government/State Government/Union Territory Administration as the case may be from time to time.

Duration of the course

- a) **Pharm.D:** The duration of the course shall be six academic years (five years of study and one year of internship or residency). The period of six years duration is divided into two phases –

Phase I – consisting of First, Second, Third, Fourth and Fifth academic year.

Phase II – consisting of internship or residency training during sixth year involving posting in specialty units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services and acquires skill under supervision of a preceptor so that he or she may become capable of functioning independently.

b) **Pharm. D. (Post Baccalaureate):** The duration of the course shall be for three academic years (two years of study and one year internship or residency). The period of three years duration is divided into two phases –

Phase I – consisting of First and Second academic year.

Phase II – consisting of Internship or residency training during third year involving posting in specialty units. It is a phase of training wherein a student is exposed to actual pharmacy practice or clinical pharmacy services, and acquires skill under supervision of a preceptor so that he or she may become capable of functioning independently.

Medium of Instruction and Examinations

Medium of Instruction and Examination shall be English.

Working days in the academic year

Each academic year shall consist of not less than 200 working days.

Attendance and Progress

A candidate is required to put in at least 80% attendance in theory and practical subjects separately. The candidate shall complete the prescribed course satisfactorily to be eligible to appear for the respective examinations.

Course of study

The course of study for Pharm.D. shall include the subjects as given in the Tables 1 to 5. The number of hours in a week, devoted to each subject for its teaching in theory, practical and tutorial shall not be less than that noted against it in columns (3), (4) and (5) below.

Table-1 First Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
1.1	Human Anatomy and Physiology	3	3	1
1.2	Pharmaceutics	2	3	1
1.3	Medicinal Biochemistry	3	3	1
1.4	Pharmaceutical Organic Chemistry	3	3	1
1.5	Pharmaceutical Inorganic Chemistry	2	3	1
1.6	Remedial Mathematics/ Biology	3	3*	1
	Total hours	16	18	6 = (40)

* For Biology

Table-2 Second Year

S.No	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
2.1	Pathophysiology	3	-	1
2.2	Pharmaceutical Microbiology	3	3	1
2.3	Pharmacognosy & Phytopharmaceuticals	3	3	1
2.4	Pharmacology-I	3	-	1
2.5	Community Pharmacy	2	-	1
2.6	Pharmacotherapeutics-I	3	3	1
	Total Hours	17	9	6 = 32

Table-3 Third Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
3.1	Pharmacology-II	3	3	1
3.2	Pharmaceutical Analysis	3	3	1
3.3	Pharmacotherapeutics-II	3	3	1
3.4	Pharmaceutical Jurisprudence	2	-	-
3.5	Medicinal Chemistry	3	3	1
3.6	Pharmaceutical Formulations	2	3	1
	Total hours	16	15	5 = 36

Table-4 Fourth Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Practical/ Hospital Posting	No. of hours of Tutorial
(1)	(2)	(3)	(4)	(5)
4.1	Pharmacotherapeutics-III	3	3	1
4.2	Hospital Pharmacy	2	3	1
4.3	Clinical Pharmacy	3	3	1
4.4	Biostatistics & Research Methodology	2	-	1
4.5	Biopharmaceutics & Pharmacokinetics	3	3	1
4.6	Clinical Toxicology	2	-	1
4.7	Pharmacotherapeutics I & II*	3	3	1
	Total hours	18	15	7 = 40

* Additional subject for Pharm.D (Post Baccalaureate) students

Table-5 Fifth Year

S.No.	Name of Subject	No. of hours of Theory	No. of hours of Hospital posting*	No. of hours of Seminar
(1)	(2)	(3)	(4)	(5)
5.1	Clinical Research	3	-	1
5.2	Pharmacoepidemiology and Pharmacoconomics	3	-	1
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	2	-	1
5.4	Clerkship *	-	-	1
5.5	Project work (Six Months)	-	20	-
	Total hours	8	20	4 = 32

* Attending ward rounds on daily basis.

Sixth Year:

Internship or residency training including postings in speciality units. Student should provide the clinical pharmacy services to the allotted wards, under the supervision of a preceptor.

- (i) Six months in General Medicine department, and
- (ii) Two months each in three other specialty departments

Academic Work

A regular record of attendance both in Theory and Practical shall be maintained by the teaching staff of respective subjects.

Internal Assessment Marks:

Theory: Three sessional examinations evenly spread during the academic year shall be conducted by the constituent colleges. The average marks of the best two examinations shall be computed out of a maximum of 30 marks and shall constitute the sessional award in theory. Provided further the colleges may conduct one special theory sessional examination towards the end of the academic session for those who might have missed any one of the regular sessional examination on genuine grounds.

Practical: Students are expected to perform the experiment listed in the respective syllabus. Marks shall be awarded out of a maximum of 10 to each of the practical exercise and an average of those shall be computed out of maximum of 10 marks. In addition, three practical examinations evenly spread during each academic year shall be conducted. The average marks of the best of two practical examinations shall be computed out of a maximum of 20 marks. A total of 30 marks shall constitute the sessional award in practical. While awarding the sessional marks for practical experiments, the following considerations should be taken into account.

1. Preparation of the candidate.
2. Manipulative skills.
3. Results of the experiment.
4. Knowledge of the experiment
5. Viva voce pertaining to the experiments only.

The college shall maintain the sessional books of the students and the record of sessional award of the students. A regular record of both theory and practical class work and sessional examinations conducted in an institution imparting the course shall be maintained for each student in the institution. Marks shall be awarded as per the schemes given in Tables 6 to 10

Conditions under which candidates are permitted to appear for university examination

The candidates are required to score a minimum of 50% marks in each of the subjects (Theory and practicals separately) in the sessional examination to be eligible to appear for university examination in the respective subject.

University Examinations

- (1) Every year there shall be an examination to examine the students.
- (2) Each examination will be held twice every year. The first examination in a year shall be the annual examination and the second examination shall be supplementary examination.
- (3) The examinations shall be of written and practical (including oral nature) carrying maximum marks for each part of a subject as indicated in Tables 6 to 10.

Table-6 First Year Examination

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		University	Sessional	Total	University	Sessional	Total
1.1	Human Anatomy and Physiology	70	30	100	70	30	100
1.2	Pharmaceutics	70	30	100	70	30	100
1.3	Medicinal Biochemistry	70	30	100	70	30	100
1.4	Pharmaceutical Organic Chemistry	70	30	100	70	30	100
1.5	Pharmaceutical Inorganic Chemistry	70	30	100	70	30	100
1.6	Remedial Mathematics/Biology	70	30	100	70*	30*	100*
				500/600			1000/1100/1200

* For Biology.

For PCMB students: 1000 marks, For PCB students: 1100 marks, For PCM students: 1200 marks

Table-7 Second Year Examination

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		University	Sessional	Total	University	Sessional	Total
2.1	Pathophysiology	70	30	100	-	-	-
2.2	Pharmaceutical Microbiology	70	30	100	70	30	100
2.3	Pharmacognosy & Phytopharmaceuticals	70	30	100	70	30	100
2.4	Pharmacology-I	70	30	100	-	-	-
2.5	Community Pharmacy	70	30	100	-	-	-
2.6	Pharmacotherapeutics-I	70	30	100	70	30	100
				600			300 = 900

Table-8 Third Year Examination

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		University	Sessional	Total	University	Sessional	Total
3.1	Pharmacology-II	70	30	100	70	30	100
3.2	Pharmaceutical Analysis	70	30	100	70	30	100
3.3	Pharmacotherapeutics-II	70	30	100	70	30	100
3.4	Pharmaceutical Jurisprudence	70	30	100	-	-	-
3.5	Medicinal Chemistry	70	30	100	70	30	100
3.6	Pharmaceutical Formulations	70	30	100	70	30	100
				600			500 = 1100

Table-9 Fourth Year Examination

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		University	Sessional	Total	University	Sessional	Total
4.1	Pharmacotherapeutics-III	70	30	100	70	30	100
4.2	Hospital Pharmacy	70	30	100	70	30	100
4.3	Clinical Pharmacy	70	30	100	70	30	100
4.4	Biostatistics & Research Methodology	70	30	100	-	-	-
4.5	Biopharmaceutics & Pharmacokinetics	70	30	100	70	30	100
4.6	Clinical Toxicology	70	30	100	-	-	-
				600			400 = 1000
4.7	Pharmacotherapeutics I & II*	70	30	100	70	30	100
				700			500 = 1200

* Additional subject for Pharm.D (Post Baccalaureate) students

Table-10 Fifth Year Examination

S.No.	Name of Subject	Maximum marks for Theory			Maximum marks for Practicals		
		University	Sessional	Total	University	Sessional	Total
5.1	Clinical Research	70	30	100	-	-	-
5.2	Pharmacoepidemiology and Pharmacoeconomics	70	30	100	-	-	-
5.3	Clinical Pharmacokinetics & Pharmacotherapeutic Drug Monitoring	70	30	100	-	-	-
5.4	Clerkship *	-	-	-	70	30	100
5.5	Project work (Six Months)	-	-	-	100**	-	100
				300			200 = 500

* 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.

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

Question Pattern

Long Essay 2/3 = 2 x 15 = 30 marks
 Short Essay 6/8 = 6 x 5 = 30 marks
 Short Answers 5/7 = 5 x 2 = 10 marks

 Total 70 marks

Criteria for pass

- Candidates who have secured a minimum of 50% marks in the Theory (including sessionals) and Practical (including sessionals) separately in any subject or subjects shall be declared to have passed in that subject/s and exempted from appearing in that subject/s at subsequent examination.
- Theory and Practical of a particular subject are considered as individual subjects for the purpose of pass criteria.
- Those candidates who fail in one or more subjects shall have to appear only in the subject so failed, in the subsequent examinations.

Conditions under which candidates are permitted to proceed to next higher class:

a) Pharm. D

1. Candidates of I Pharm.D are permitted to carry not more than any two subjects (Two Theory/ Two Practicals/ One theory & one practical of same or different subjects) to II Pharm.D and appear for II Pharm.D examination concurrently along with failed subjects of I Pharm.D. However, these candidates have to pass all the failed subjects of I Pharm.D to become eligible to III Pharm.D.
2. Similarly, candidates of II Pharm.D who have completely passed all the subjects of I Pharm.D but have failed in II Pharm.D are permitted to carry not more than any two subjects (Two Theory/ Two Practicals/ One theory & one practical of same or different subjects) of II Pharm.D to III Pharm.D and appear for III Pharm.D concurrently along with failed subjects of II Pharm.D. However, these candidates have to pass all the failed subjects of II Pharm.D to become eligible to proceed to IV Pharm.D.
3. Candidates of III Pharm.D who have completely passed all the subjects of II Pharm.D but have failed in III Pharm.D are permitted to carry not more than any two subjects (Two Theory/ Two Practicals/ One theory & one practical of same or different subjects) of III Pharm.D to IV Pharm.D and appear for IV Pharm.D examination concurrently along with failed subjects of III Pharm.D. However, these candidates have to pass all the failed subjects of III Pharm.D to become eligible to proceed to V Pharm.D.
5. Candidates of IV Pharm.D who have completely passed all the subjects of III Pharm.D but have failed in IV Pharm.D are permitted to carry not more than any two subjects (Two Theory/ Two Practicals/ One theory & one practical of same or different subjects) of IV Pharm.D to V Pharm.D and appear for V Pharm.D examination concurrently along with failed subjects of IV Pharm.D. However, these candidates have to pass all the failed subjects of IV and V Pharm. D to become eligible to proceed to VI Pharm. D., to undergo internship.

b) Pharm.D. (Post Baccalaureate)

Candidates of Pharm. D. (Post Baccalaureate) admitted directly to IV year course are permitted to carry not more than any two subjects (Two Theory/ Two Practicals/ One theory & one practical of same or different subjects) to V Pharm.D. and appear for V Pharm. D. examination concurrently along with failed subjects of IV Pharm. D. However, these candidates have to pass all the subjects of IV & V Pharm. D to become eligible to proceed to VI Pharm. D., to undergo internship.

Declaration of class

a) Pharm. D

Class shall be awarded at the end of I, II, III, IV and V year of Pharm.D. examination as shown below:

- | | |
|-----------------|---------------------------------|
| 1) Distinction | 75% and above |
| 2) First Class | 60% and above and less than 75% |
| 3) Second class | 50% and above and less than 60% |

The result of the successful candidate shall be classified at the end of the final year examination on the basis of the aggregate of all subjects, theory and practicals, secured by the candidate in the I to V year examinations and completes the course in 5 years, as indicated below.

- | | |
|----------|-----------------|
| I Class | : 60% and above |
| II Class | : 50%-59% |

Candidate securing aggregate of 75% or above marks and have passed in all the subjects in a year in first attempt shall be declared to have obtained Distinction.

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 as per Pharmacy Council of India regulations.

Practical training

- 1. Hospital posting.**— Every student shall be posted in constituent hospital 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 and in first and second year of Pharm.D. (Post Baccalaureate). Each student shall submit report duly certified by the preceptor and duly attested by the Head of the Department or Institution as prescribed. In the fifth year, every student shall spend half a day in the morning hours attending ward rounds on daily basis as a part of clerkship. Theory teaching may be scheduled in the afternoon.
- 2. Project work.**— (1) To allow the student to develop data collection and reporting skills in the area of community, hospital and clinical pharmacy, a project work shall be carried out under the supervision of a teacher. The project topic must be approved by the Head of the Department or Head of the Institution. The same shall be announced to students within one month of commencement of the fifth year classes of Pharm.D and second year of Pharm.D. (Post Baccalaureate). Project work shall be presented in a written report and as a seminar at the end of the year. External and the internal examiners shall do the assessment of the project work.
(2) Project work shall comprise of objectives of the work, methodology, results, discussions and conclusions.
- 3. Objectives of project work.**— The main objectives of the project work is to—
 - (i) show the evidence of having made accurate description of published work of others and of having recorded the findings in an impartial manner; and
 - (ii) develop the students in data collection, analysis and reporting and interpretation skills.

4. Methodology.— To complete the project work following methodology shall be adopted, namely: —

- (i) students shall work in groups of not less than *two* and not more than *four* under an authorised teacher;
- (ii) project topic shall be approved by the Head of the Department or Head of the Institution;
- (iii) project work chosen shall be related to the pharmacy practice in community, hospital and clinical setup. It shall be patient and treatment (Medicine) oriented, like drug utilisation reviews, pharmacoepidemiology, pharmacovigilance or pharmacoconomics;
- (iv) project work shall be approved by the institutional ethics committee;
- (v) student shall present at least three seminars, one in the beginning, one at middle and one at the end of the project work; and
- (vi) two-page write-up of the project indicating title, objectives, methodology anticipated benefits and references shall be submitted to the Head of the Department or Head of the Institution.

5. Reporting .— (1) Student working on the project shall submit jointly to the Head of the Department or Head of the Institution a project report of about 40-50 pages. Project report should include a certificate issued by the authorised teacher, Head of the Department as well as by the Head of the Institution

(2) Project report shall be computer typed in double space using Times Roman font on A4 paper. The title shall be in bold with font size 18, sub-titles in bold with font size 14 and the text with font size 12. The cover page of the project report shall contain details about the name of the student and the name of the authorised teacher with font size 14.

(3) Submission of the project report shall be done at least one month prior to the commencement of annual or supplementary examination.

6. Evaluation.— The following methodology shall be adopted for evaluating the project work—

- (i) Project work shall be evaluated by internal and external examiners.
- (ii) Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of four students).
- (iii) Three seminars presented by students shall be evaluated for twenty marks each and the average of best two shall be forwarded to the university with marks of other subjects.

(iv) Evaluation shall be done on the following items:	Marks
a) Write up of the seminar	(7.5)
b) Presentation of work	(7.5)
c) Communication skills	(7.5)
d) Question and answer skills	(7.5)
Total	(30 marks)

(v) Final evaluation of project work shall be done on the following items:	Marks
a) Write up of the seminar	(17.5)
b) Presentation of work	(17.5)
c) Communication skills	(17.5)
d) Question and answer skills	(17.5)
Total	(70 marks)

Explanation.— For the purposes of differentiation in the evaluation in case of topic being the same for the group of students, the same shall be done based on item numbers b, c and d mentioned above.

Award of Ranks

Ranks and Medals shall be awarded on the basis of aggregate of all the five and two university examinations of Pharm.D. and Pharm.D. (Post Baccalaureate), respectively. However, candidates who fail in one or more subjects during the Pharm.D/ Pharm.D. (Post Baccalaureate) courses shall not be eligible for award of ranks.

Moreover, the candidates should have completed the Pharm.D course in minimum prescribed number of years, (five years for Pharm.D and two years for Pharm.D. (Post Baccalaureate)) for the award of Ranks.

Award of degree

Candidates who fulfill the requirements mentioned above will be eligible for award of degree during the ensuing convocation.

Duration for completion of the course of study

The duration for the completion of the course shall be fixed as double the actual duration of the course and the students have to pass within the said period, otherwise they have to get fresh Registration.

Revaluation / Retotalling of answer papers

There is no provision for revaluation of the answer papers of failed candidates in any examination. However, the failed candidates can apply for retotalling.

Re-admission after break of study

Candidate who seeks re-admission to the course after break of study has to get the approval from the university by paying a condonation fee.

No condonation is allowed for the candidate who has more than 2 years of break up period and he/she has to rejoin the course by paying the required fees.