



PONDICHERY UNIVERSITY
Puducherry – 605 014.

BACHELOR OF PHARMACY
*** *B.PHARM.* ***

REGULATIONS

2006 -07

PONDICHERRY UNIVERSITY
Puducherry

REGULATIONS OF THE UNIVERSITY

I. SHORT TITLE AND COMMENCEMENT

These regulations shall be called "THE REGULATIONS FOR THE BACHELOR OF PHARMACY DEGREE COURSE OF PONDICHERRY UNIVERSITY, Puducherry".

They shall come into force from the academic year 2006-2007 session.

The regulation and syllabi are subject to modifications by the standing Under Graduate Board of Studies for paramedical courses from time to time.

II. REGULATIONS

1. ELIGIBILITY FOR ADMISSION:

Candidates should have a pass in the Higher Secondary Examination (academic) conducted by the Board of Higher Secondary Examination of Tamil Nadu, or any other equivalent examination accepted by the University, thereto with a minimum of 50% marks (40% marks for SC, ST, MBC, OBC candidates) in Part-III subjects of Physics, Chemistry & Biology/Botany & Zoology/Mathematics/ Computer Sciences/Biotechnology) and should have English as one of the subjects.

2. DURATION OF THE COURSE AND COURSE OF STUDY:

The period of certified study and training of the B.Pharm. degree course shall be of Four academic years consist of eight semesters.

3. MEDIUM OF INSTRUCTION:

English shall be the medium of instruction for all the subjects of study and for examinations of the Course.

4. MINIMUM WORKING DAYS IN AN ACADEMIC YEAR:

Each academic year shall consist of not less than 180 working days (Minimum 90 working days per semester).

5. REGISTRATION:

A Candidate admitted into B.Pharm. Degree course in any one of the affiliated institutions of the PONDICHERRY UNIVERSITY, Puducherry shall submit the prescribed application form for registration duly filled along with prescribed fee and declaration in the format, to the Academic Officer of this University through the affiliated institution within 60 days from the cut-off date prescribed for admission.

6. ATTENDANCE REQUIRED FOR APPEARING EXAMINATION:

- a) Examination will be conducted in both theory and practical as prescribed. Candidates will be permitted to appear for the University Examinations in the subject, only if they secure not less than 80% of attendance in each subject of the respective semester / year.
- b) A student who does not meet the minimum attendance requirement in a semester or year must repeat the course along with the next batch of students.

7. CONDONATION FOR LACK OF ATTENDANCE:

Condonation of shortage of attendance in aggregate up to 10% (between 70% and 80%) in each semester may be granted by the College Academic Committee and as per the regulations of University.

8. INTERNAL ASSESSMENT:

Internal assessment will be done in each subject of study and the marks will be awarded to the candidates as detailed in the scheme of examinations. The marks awarded will be on the basis of the candidate's performance in the assignments, class tests, laboratory work, preparation and presentation of seminars as assessed by the teachers.

9. EXAMINATIONS:

- a) The University Examinations will be conducted in the semester pattern for all the four years, each year consisting of two semesters.
- b) The particulars of subjects for various examinations and distribution of marks are detailed in the Scheme of Examination.
- c) The examination for the main subjects will be conducted by the University and the marks for the non-examination subjects will be awarded by the subject handling faculty and forwarded to University by the concerned college.
- d) The Pondicherry University Practical Examinations shall be jointly conducted by one internal and one external examiner duly appointed by the University.

10. ELIGIBILITY / MAXIMUM DURATION FOR THE AWARD OF THE DEGREE:

- a) The candidates shall be eligible for the Degree of Bachelor of Pharmacy when they have undergone the prescribed course of study for a period of not less than four years in an institution approved by the University and have passed the prescribed examinations in all subjects.
- b) The maximum period to complete the course successfully should not exceed a period of eight years.

11. MARKS QUALIFYING FOR A PASS:

50% of marks in the University Theory examination.

50% of marks in the University Practical examination.

50% of marks in aggregate in Theory, Practical, Viva-voce examination and Internal assessment taken together.

12. DECLARATION OF CLASS:

- A successful candidate obtaining 75% and more marks in the grand total aggregate in the first attempt shall be declared to have passed with **Distinction**.
- A successful candidate obtaining 60% and more but less than 75% of marks in the grand total aggregate shall be declared to have passed with **First Class**.
- A successful candidate obtaining 50% and more but less than 60% of marks in the grand total aggregate shall be declared to have passed with **Second Class**.
- Ranks shall be declared on the basis of the aggregate marks obtained by a candidate in the University Examination subjects of the course. Only those candidates who have passed all the subjects in all examination in the first attempt shall be eligible for the award of **Rank**.

III. SCHEME OF EXAMINATION

Duration of Examination : 3 Hours

S.No.	Subjects	UE Max	UE Min	IA Max	IA Min	Total Max.	Total Min.
	Semester- I						
1.1.1	Pharmaceutical Analysis - I (Theory)	80	40	20	-	100	50
	Pharmaceutical Analysis - I (Practical)	80	40	20	-	100	50
1.1.2	Remedial Mathematics (Theory)	80	40	20	-	100	50
1.1.3	Pharmacognosy - I (Theory)	80	40	20	-	100	50
	Pharmacognosy - I (Practical)	80	40	20	-	100	50
1.1.4	Pharmaceutical chemistry - I (Inorganic Pharmaceutical Chemistry) (Theory)	80	40	20	-	100	50
	Pharmaceutical chemistry - I (Inorganic Pharmaceutical Chemistry) (Practical)	80	40	20	-	100	50
1.1.5	Computer Application in Pharmacy (Theory)	80	40	20	-	100	50
	Computer Application in Pharmacy (Practical)	80	40	20	-	100	50
	Semester - II						
1.2.1	Pharmaceutics - I (Physical Pharmacy) (Theory)	80	40	20	-	100	50
	Pharmaceutics - I (Physical Pharmacy) (Practical)	80	40	20	-	100	50
1.2.2	Advanced Mathematics (Theory)	80	40	20	-	100	50
1.2.3	Pharmaceutical Chemistry-II (Physical Chemistry-I) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry-II (Physical Chemistry-I) (Practical)	80	40	20	-	100	50
1.2.4	Pharmaceutical Chemistry-III (Organic Chemistry-I) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry-III (Organic Chemistry-I) (Practical)	80	40	20	-	100	50
1.2.5	Anatomy, Physiology & Health Education (APHE-I) (Theory)	80	40	20	-	100	50
	Anatomy, Physiology & Health Education (APHE-I) (Practical)	80	40	20	-	100	50
	Semester - III						
2.3.1	Pharmaceutics-II (Unit Operations-I) (Theory)	80	40	20	-	100	50
	Pharmaceutics-II (Unit Operations-I) (Practical)	80	40	20	-	100	50
2.3.2	Pharmaceutical Chemistry - IV (Organic chemistry-II) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry - IV (Organic chemistry-II) (Practical)	80	40	20	-	100	50
2.3.3	Pharmacognosy - II (Theory)	80	40	20	-	100	50
	Pharmacognosy - II (Practical)	80	40	20	-	100	50
2.3.4	Pharmaceutical Analysis - II (Theory)	80	40	20	-	100	50
	Pharmaceutical Analysis - II (Practical)	80	40	20	-	100	50
2.3.5	Anatomy, Physiology & Health Education (APHE-II) (Theory)	80	40	20	-	100	50
	Anatomy, Physiology & Health Education (APHE-II) (Practical)	80	40	20	-	100	50

	Semester - IV						
2.4.1	Pharmaceutics- III (Unit Operations - II) (Theory)	80	40	20	-	100	50
	Pharmaceutics- III (Unit Operations - II) (Practical)	80	40	20	-	100	50
2.4.2	Pharmaceutical Microbiology (Theory)	80	40	20	-	100	50
	Pharmaceutical Microbiology (Theory)	80	40	20	-	100	50
2.4.3	Pharmacognosy - III (Theory)	80	40	20	-	100	50
	Pharmacognosy - III (Practical)	80	40	20	-	100	50
2.4.4	Pathophysiology of common Diseases (Theory)	80	40	20	-	100	50
2.4.5	Pharmaceutics- IV(Dispensing & Community Pharmacy) (Theory)	80	40	20	-	100	50
	Pharmaceutics- IV(Dispensing & Community Pharmacy) (Practical)	80	40	20	-	100	50
	Semester - V						
3.5.1	Pharmaceutical Chemistry-V(Biochemistry) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry-V(Biochemistry) (Practical)	80	40	20	-	100	50
3.5.2	Pharmaceutics - V (Pharmaceutical Technology - I) (Theory)	80	40	20	-	100	50
	Pharmaceutics - V (Pharmaceutical Technology - I) (Practical)	80	40	20	-	100	50
3.5.3	Pharmacology - I (Theory)	80	40	20	-	100	50
	Pharmacology - I (Practical)	80	40	20	-	100	50
3.5.4	Pharmacognosy - IV (Theory)	80	40	20	-	100	50
	Pharmacognosy - IV (Practical)	80	40	20	-	100	50
3.5.5	Pharmaceutics - VI (Hospital Pharmacy) (Theory)	80	40	20	-	100	50
	Pharmaceutics - VI (Hospital Pharmacy) (Practical)	80	40	20	-	100	50
	Semester - VI						
3.6.1	Pharmaceutical Chemistry - VI (Medicinal Chemistry - I) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry - VI (Medicinal Chemistry - I) (Practical)	80	40	20	-	100	50
3.6.2	Pharmaceutical Jurisprudence & Ethics (Theory)	80	40	20	-	100	50
3.6.3	Pharmaceutics - VII (Biopharmaceutics & Pharmacokinetics) (Theory)	80	40	20	-	100	50
	Pharmaceutics - VII (Biopharmaceutics & Pharmacokinetics) (Practical)	80	40	20	-	100	50
3.6.4	Pharmacology - II (Theory)	80	40	20	-	100	50
	Pharmacology - II (Practical)	80	40	20	-	100	50
3.6.5	Pharmacognosy - V (Chemistry of Natural Products) (Theory)	80	40	20	-	100	50
	Pharmacognosy - V (Chemistry of Natural Products) (Practical)	80	40	20	-	100	50

Semester - VII							
4.7.1	Pharmaceutical Biotechnology (Theory)	80	40	20	-	100	50
4.7.2	Pharmaceutics - VIII (Pharmaceutical Technology - II) (Theory)	80	40	20	-	100	50
	Pharmaceutics - VIII (Pharmaceutical Technology - II) (Practical)	80	40	20	-	100	50
4.7.3	Pharmaceutical Industrial Management (Theory)	80	40	20	-	100	50
4.7.4	Pharmacology - III (Theory)	80	40	20	-	100	50
	Pharmacology - III (Practical)	80	40	20	-	100	50
4.7.5	Pharmaceutical Chemistry - VII(Medicinal Chemistry - II) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry - VII(Medicinal Chemistry - II) (Practical)	80	40	20	-	100	50
Semester- VIII							
4.8.1	Pharmaceutics - IX (Theory)	80	40	20	-	100	50
	Pharmaceutics - IX (Practical)	80	40	20	-	100	50
4.8.2	Pharmaceutical Analysis - III (Theory)	80	40	20	-	100	50
	Pharmaceutical Analysis - III (Practical)	80	40	20	-	100	50
4.8.3	Pharmaceutical Chemistry - VIII (Medicinal Chemistry - III) (Theory)	80	40	20	-	100	50
	Pharmaceutical Chemistry - VIII (Medicinal Chemistry - III) (Practical)	80	40	20	-	100	50
4.8.4	Pharmacognosy - VI (Theory)	80	40	20	-	100	50
	Pharmacognosy - VI (Practical)	80	40	20	-	100	50
4.8.5	Pharmacology - IV (Clinical Pharmacy & Drug Interactions) (Theory)	80	40	20	-	100	50
4.8.6	Project - Elective	-	-	200	100	200	100

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PONDICHERY UNIVERSITY

B.PHARM – SYLLABUS

TEXT BOOKS / REFERENCE BOOKS RECOMMENDED

IT IS UNDERSTOOD THAT THE TEACHER WOULD FOLLOW AND RECOMMEND LATEST EDITION OF THE BOOK, HENCE THE SPECIFIC EDITION AND YEARS OF PUBLICATION ARE OMITTED.

PHARMACOGNOSY:

1. Atal C.K. and Kapur.B.M., Cultivation and utilization of Medicinal Plants, RRL, Jammu.
2. Harbone J B, Phytochemical Methods, Chapman and Hall, International Edition, London.
3. Nadkarni A K, Indian Materia Medica, 1-2, Popular Prakashan Pvt. Ltd., Bombay.
4. Peach. K, and Tracey M V, Modern Methods of Plant Analysis, 1-4, Narosa Publishing House, New Delhi.
5. Pharmacopoeia of India, 1985, 1996 Govt. of India, Ministry of Health and Family Welfare.
6. The Wealth of India, Raw materials (all volumes), Council of Scientific and Industrial Research, New Delhi.
7. Trease G E and Evans W C, Pharmacognosy, Bailliere Tindall, Eastbourne, U K.
8. Wallils T E, Text book of Pharmacognosy, J & A Churchill Ltd., London.
9. Zafar R, Medicinal plants of India, CBS Publishers, New Delhi.
10. Vijay Verma, International Encyclopaedia of Medicinal Plants, volume 1-18, Anmol Publishers, New Delhi.

COMPUTER APPLICATIONS IN PHARMACY:

1. V. Rajaraman, Fundamentals of Computers, Prentice Hall of India Pvt. Ltd., New Delhi.
2. N.C. Jain and M S Saakshi, Computers for Nurses, A.I.T.B.S Publishers, New Delhi.
3. Naveen Thacker and Niranjana Shendurnikar, Computers for Nurses, JAYPEE BROTHERS Medical Publishers Pvt. Ltd., New Delhi.
4. C. Xavier, Introduction to Computers, New Age International Pvt. Ltd. Publishers, New Delhi.

PHARMACEUTICAL ANALYSIS, PHARMACEUTICAL CHEMISTRY AND BIO-CHEMISTRY:

1. Beckett A H, and Stenlake J B, Practical Pharmaceutical Chemistry Vol. I and II, The Athlone Press of University of London.
2. Finar I L, Organic Chemistry, vol. I and II, ELBS/Longman, London.
3. Foye W C, Principles of Medicinal Chemistry, Lea & Febiger, Philadelphia.
4. Jayaraman J, Laboratory manual in Bio-chemistry, Wiley Eastern Limited, New Delhi.

5. Lehninger A L, Biochemistry, Worth Publishers , New Delhi.
6. Lehninger A L, Principles of Biochemistry, CBS Publishers and Distributors.
7. Morrison T R and Boyd R N, Organic Chemistry, Prentice Hall of India Pvt. Ltd., New Delhi.
8. Vogel A I, A Textbook of Practical Organic Chemistry, The English Language book society and Longman group limited, London.
9. Willard, Merritt Dean Settle, Instrumental methods of Analysis, CBS Publishers and Distributors.
10. Kenneth and Cornors ,Text book of Pharmaceutical Analysis, (WBL).
11. Ahsutosh Kar, Pharmaceutical Drug Analysis, New Age International Publishers, New Delhi.
12. Robert D. Braun, Introduction to Instrumental Analysis, Pharma Book Syndicate, Hyderabad.
13. Bentley and Driver, Text book of Pharmaceutical Chemistry, Oxford Medical.
14. Bansal, Heterocyclic chemistry, New Age International Publishers, New Delhi.
15. PS Kalsi, Chemistry of Natural Products, Kalyani Publishers.
16. Arthur I Vogel, Small scale preparations, CBS Publishers and Distributors.
17. Burger's Medicinal Chemistry and Drug Discovery, John Wiley & sons Publications.
18. Camille Georges welmuth, The Practice of Medicinal Chemistry, Elsevier.
19. British Pharmacopoeia, London Stationary Office, London.
20. United States Pharmacopoeia, United States Pharmacopoeial convention. Inc.
21. Merck - index

PHARMACEUTICS:(Pharmaceutical Technology, Dispensing Pharmacy, Forensic Pharmacy and Pharmaceutical Microbiology)

1. Theory and practice of industrial pharmacy by Lachmann and Liebermann.
2. Pharmaceutical Dosage Form. Tablets Vol. 1-3 by Leon Lachmann.
3. Pharmaceutical Dosage Form. Disperse system, Vol. 1-2 by Leon Lachmann.
4. Pharmaceutical Dosage Form. Parental Medications Vol. 1-2 by Leon Lachmann.
5. Modern Pharmaceutics, By Gillbert and S.Banker.
6. Remington's Pharmaceutical Sciences.
7. Physical Pharmacy by Alfred Martin.
8. Bentley's Text Book of Pharmaceutics by Rawlins.
9. Good Manufacturing practice for Pharmaceuticals. A Plan for total quality control, second edition, by Sidney H. Willing.
10. Applied Biopharmaceutics And Pharmacokinetics by L,Shargel.
11. Pharmacokinetics: By Milo Gibaldi, Donald Perrier, Marcel Dekker Inc.
12. Handboob of Clinical Pharmacokinetics; by Milo Gibaldi and Laurie Prescott by ADIS, Health Science Press.
13. Biopharmaceutics and Pharmacokinetics – by Robert E.Notari.
14. Biopharmaceutics and Pharmacokinetics – by D.M. Brahmankar and Sunil B. Jaiswal, Vallabh Prakashan Pitampura, Delhi.

15. Clinical Pharmacokinetics, concept and Application; By Malcolm Rowland and Thomas N, Tozer. Lea and Febiger, Philadelphia, 1995.
16. Dissolution, Bioavailability and Bioequivalence; By Abdou H.M, Mark publishing Company, Pennsylvania, 1989.
17. Biopharmaceutics And Clinical Pharmacokinetics – An Introduction, 4th edition, Revised and expanded by Robert E Notari, Marcel / Dekker Ine, New York and Basel, 1987.
18. Encyclopedia of Pharmaceutical Technology, Vol.13, James Swarbrick, James C Baylan Marcel Dekker ine, New York, 1996.
19. Biopharmaceutics and Pharmacokinetics by Kulkarni.
20. Biopharmaceutics and Pharmacokinetics by Venkateshwaralu.

21. Encyclopedia of Controlled delivery By Edith Mathiowtz Published by Wiley Inter Science publication, John Wiley and sons, Ins, New York / Chichester / Weinheirn.
22. Controlled and Novel Drug Delivery By N.K. Jain CBS Publishers and Distrbutors, New Delhi, First Edition, 1997 (reprint in 2001).
23. Controlled Drug Delivery – concept and Advances, By S.P.Vyas Vallabh Prakashan, New Delhi, First Edition, 2002.
24. Remington’s Pharmaceutical Sciences.
25. Novel Drug Delivery System, By Y.W. Chien, Marcel Dekker, Inc.
26. Controlled Drug Delivery – Fundamentals and Applications 2nd edition; By Joseph R.Robinson and Vincent H.L.Lee.

PHYSIOLOGY ANATOMY & HEALTH, PHARMACOLOGY AND CLINICAL PHARMACY:

1. Essentials of Medical Pharmacology by K.D.Tripathi (Jaypee & co)
2. Pharmacology by M.M.Das (Books & Allied)
3. Clinical Pharmacology by Prem Nyati (Globe Medik)
4. Elements of Clinical Pharmacy by R.K.Goyal (B.S.Shah)
5. General Principles of Pharmacology by Mirmis Bahuddin (Books& Allied)
6. Pharmacology by Leonard Jacab (Harmal Publising & co)
7. Pharmacology by Bhattacharya (Elsevier)
8. Pharmacology and Pharmacotherapeutics by R.S.Sathoskar and S.D. Bhandakar (Popular Prakash)
9. Clinical Pharmacology by Laurence and Bennett (ELBS)
10. Essential of Pharmacotherapeutics by Barar (Chand & co)
11. Modern Pharmacology by Charles Greig (Little Brown & co)
12. Pharmacology by Rang & Dale (Churchill Livingston)
13. Pharmacotherapy by Dipino (McGrew hill)
14. Pharmacology by Richard D Howland (Lippincott William)
15. Pharmacological basis of Therapeutics by Goodman & Gilman’s (McGrew Hill co)
16. Clinical Pharmacology by Bennett & Brown (Elsevier)
17. Practicals in Pharmacology by R.K.Goyal (B.S.Shah)
18. Handbook of Experimental Pharmacology by S.K.Kulkarni (Vallabh Prakash)

19. Experiments in Pharmacy & Pharmacology by J.K.Grover (CBS Publisher)
20. Fundamentals of Experimental Pharmacology by M.N.Ghosh(Scientific book agency)