INVERSITY BAREILLY BUILDING VIBRANT PERSONALITIES

COURSE STRUCTURE DEPARTMENT OF PHARMACY NAAC CRITERIA 1.2.2



Pharmacy Council of India New Delhi

Draft Rules & Syllabus for the Bachelor of Pharmacy (B. Pharm) Course

[Framed under Regulation 6, 7 & 8 of the Bachelor of Pharmacy (B. Pharm) course regulations 2014]

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CHAPTER-I: REGULATIONS

1. Short Title and Commencement

These regulations shall be called as "The Revised Regulations for the B. Pharm. Degree Program (CBCS) of the Pharmacy Council of India, New Delhi". They shall come into effect from the Academic Year 2016-17. The regulations framed are subject to modifications from time to time by Pharmacy Council of India.

2. Minimum qualification for admission

2.1 First year B. Pharm:

Candidate shall have passed 10+2 examination conducted by the respective state/central government authorities recognized as equivalent to 10+2 examination by the Association of Indian Universities (AIU) with English as one of the subjects and Physics, Chemistry, Mathematics (P.C.M) and or Biology (P.C.B / P.C.M.B.) as optional subjects individually. Any other qualification approved by the Pharmacy Council of India as equivalent to any of the above examinations.

2.2. B. Pharm lateral entry (to third semester):

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

3. Duration of the program

The course of study for B.Pharm shall extend over a period of eight semesters (four academic years) and six semesters (three academic years) for lateral entry students. The curricula and syllabi for the program shall be prescribed from time to time by Pharmacy Council of India, New Delhi.

4. Medium of instruction and examinations

Medium of instruction and examination shall be in English.

5. Working days in each semester

Each semestershall consist of not less than 100 working days. The odd semesters shall be conducted from the month of June/July to November/December and the even semesters shall be conducted from December/January to May/June in every calendar year.

6. Attendance and progress

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

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7. Program/Course credit structure

As per the philosophy of Credit Based Semester System, certain quantum of academic work viz. theory classes, tutorial hours, practical classes, etc. are measured in terms of credits. On satisfactory completion of the courses, a candidate earns credits. The amount of credit associated with a course is dependent upon the number of hours of instruction per week in that course. Similarly, the credit associated with any of the other academic, co/extra-curricular activities is dependent upon the quantum of work expected to be put in for each of these activities per week.

7.1. Credit assignment

7.1.1. Theory and Laboratory courses

Courses are broadly classified as Theory and Practical. Theory courses consist of lecture (L) and /or tutorial (T) hours, and Practical (P) courses consist of hours spent in the laboratory. Credits (C) for a course is dependent on the number of hours of instruction per week in that course, and is obtained by using a multiplier of one (1) for lecture and tutorial hours, and a multiplier of half (1/2) for practical (laboratory) hours. Thus, for example, a theory course having three lectures and one tutorial per week throughout the semester carries a credit of 4. Similarly, a practical having four laboratory hours per week throughout semester carries a credit of 2.

7.2. Minimum credit requirements

The minimum credit points required for award of a B. Pharm. degree is 208. These credits are divided into Theory courses, Tutorials, Practical, Practice School and Projectover the duration of eight semesters. The credits are distributed semesterwise as shown in Table IX. Courses generally progress in sequences, building competencies and their positioning indicates certain academic maturity on the part of the learners. Learners are expected to follow the semester-wise schedule of courses given in the syllabus.

The lateral entry students shall get 52 credit points transferred from their D. Pharm program. Such students shall take up additional remedial courses of 'Communication Skills' (Theory and Practical) and 'Computer Applications in Pharmacy' (Theory and Practical) equivalent to 3 and 4 credit points respectively, a total of 7 credit points to attain 59 credit points, the maximum of I and II semesters.

8. Academic work

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

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9. PROGRAM OUTCOMES

- **PO.1 Pharmacy Knowledge:** Possess knowledge and comprehension of the core and basic knowledge associated with the profession of pharmacy, including biomedical sciences; pharmaceutical sciences; behavioral, social, and administrative pharmacy sciences; and manufacturing practices.
- **PO.2 Planning Abilities:** Demonstrate effective planning abilities including time management, resource management, delegation skills and organizational skills. Develop and implement plans and organize work to meet deadlines.
- **PO.3 Problem analysis:** Utilize the principles of scientific enquiry, thinking analytically, clearly and critically, while solving problems and making decisions during daily practice. Find, analyze, evaluate and apply information systematically and shall make defensible decisions.
- PO.4 Modern tool usage: Learn, select, and apply appropriate methods and procedures, resources, and modern pharmacy-related computing tools with an understanding of the limitations.
- **PO.5 Leadership skills:** Understand and consider the human reaction to change, motivation issues, leadership and team-building when planning changes required for fulfillment of practice, professional and societal responsibilities. Assume participatory roles as responsible citizens or leadership roles when appropriate to facilitate improvement in health and well-being.
- **PO.7 Pharmaceutical Ethics:** Honor personal values and apply ethical principles in professional and social contexts. Demonstrate behavior that recognizes cultural and personal variability in values, communication and lifestyles. Use ethical frameworks; apply ethical principles while making decisions and take responsibility for the outcomes associated with the decisions.
- **PO.8 Communication:** Communicate effectively with the pharmacy community and with society at large, such as, being able to comprehend and write effective reports, make effective presentations and documentation, and give and receive clear instructions.
- **PO.9 Pharmacist and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety and legal issues and the consequent responsibilities relevant to the professional pharmacy practice.

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10. Course of study

The course of study for B. Pharm shall include Semester Wise Theory & Practical as given in Table - I to VIII. The number of hours to be devoted to each theory, tutorial and practical course in any semester shall not be less than that shown in Table -I to VIII.

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Course code	Name of the course	No. of hours	Tuto rial	Credit points
DDI01T	Human Anatomy and Physiology I-	3	1	4
BLIOIT	Theory Theory	3	1	4
BP102T	Pharmaceutical Analysis I – Theory	3	1	4
BP103T	Pharmaceutical Inorganic Chemistry –	3	1	4
BP104T	Theory	2	1 -	2
BP105T	Communication skills – Theory *			2
BP106RBT	Remedial Biology/ Remedial Mathematics – Theory*	2		
BP106RM1	Human Anatomy and Physiology –	4	-	2
BP107P	Practical	4		2
BP108P	Pharmaceutical Analysis I – Practical	4	-	2
BP109P	Pharmaceutics I – Practical			2
BP110P	Pharmaceutical Inorganic Chemistry -	4	-	2
DI IIOI	Practical Practical*	2	•	1
BP111P	Communication skins Tractical*	2	-	1
BP112RBP	Remedial Biology – Hactical	32/34 /36	4	27/29

[#]Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and

appearing for Remedial Biology (RB)course.

*Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM)course.

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* Non University Examination (NUE)

Course	Name of the course	No. of hours	Tutorial	Credit points
DDDO1T	Human Anatomy and Physiology II - Theory	3	1	4
BP2011 BP202T	Pharmaceutical Organic Chemistry I – Theory	3	1	4
BP202T	Biochemistry – Theory	3	1	4
BP204T	Pathophysiology – Theory	3	1	4
BP205T	Computer Applications in Pharmacy – Theory *	3		3
BP206T	Environmental sciences – Theory *	3		3
BP207P	Human Anatomy and Physiology II – Practical	4	•	2
BP208P	Pharmaceutical Organic Chemistry I- Practical	4	· · · ·	2
BP209P	Biochemistry – Practical	4		2
BP210P	Computer Applications in Pharmacy – Practical*	2	-	1
DI 2101	Total	32	4	29

Table-II: Course of study for semester II

*Non University Examination (NUE)

Table-III: Course of study for semester III

Course	Name of the course	No. of hours	Tutorial	Credit points
PP301T	Pharmaceutical Organic Chemistry II – Theory	3	1	4
BP302T	Physical Pharmaceutics I – Theory	3	1	4
BP303T	Pharmaceutical Microbiology – Theory	3	1	4
BP304T	Pharmaceutical Engineering – Theory	3	1	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	4	-	2
BP306P	Physical Pharmaceutics I – Practical	4		2
BP307P	Pharmaceutical Microbiology – Practical	4	-	2
BP 308P	Pharmaceutical Engineering –Practical	4	-	2
BI 3081	Total	28	4	24

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Table-IV: Course o	f study f	or semester IV
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Course	Name of the course	No. of hours	Tutorial	Credit points
BP401T	Pharmaceutical Organic Chemistry III- Theory	3	1	4
BP402T	Medicinal Chemistry I – Theory	3	1	4
BP403T	Physical Pharmaceutics II – Theory	3	1	4
BP404T	Pharmacology I – Theory	3	1	4
BP405T	Pharmacognosy and Phytochemistry I- Theory	3	1	4
BP406P	Medicinal Chemistry I – Practical	4	-	2
BP407P	Physical Pharmaceutics II – Practical	4		2
BP408P	Pharmacology I – Practical	4	-	2
BP409P	Pharmacognosy and Phytochemistry I – Practical	4	-	2
DI 1071	Total	31	5	28

Table-V: Course of study for semester V

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP501T	Medicinal Chemistry II – Theory	3	1	4
BP502T	Industrial PharmacyI– Theory	3	1	4
BP503T	Pharmacology II – Theory	3	1	4
BP504T	Pharmacognosy and Phytochemistry II– Theory	3	1	4
BP505T	Pharmaceutical Jurisprudence – Theory	3	1	4
BP506P	Industrial Pharmacyl – Practical	4	-	2
BP507P	Pharmacology II – Practical	4	-	2
BP508P	Pharmacognosy and Phytochemistry II – Practical	4	-	2
	Total	27	5	26

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Course	Name of the course	No. of hours	Tutorial	Credit points
code	Theory	3	1	4
BP601T	Medicinal Chemistry III – Theory	3	1	4
BP602T	Pharmacology III – Theory	5		1
BP603T	Herbal Drug Technology – Theory	3	1	
BP604T	Biopharmaceutics and Pharmacokinetics –	3	1	4
1	Theory Theory	3	1	4
BP605T	Pharmaceutical Biotechnology – Theory	3	1	4
BP606T	Quality Assurance – Theory	5		2
BP607P	Medicinal chemistry III – Practical	4	-	
DICOOD	Pharmacology III - Practical	4	-	2
BP608P	Phalmacology III Trached	4	-	2
BP609P	Herbal Drug Technology – Placucal Total	30	6	30

Table-VI: Course of study for semester VI

Table-VII: Course of study for semester VII

Course	Name of the course	No. of hours	Tutorial	Credit points
code	L to monthal Methods of Analysis - Theory	3	1	4
BP701T	Instrumental Methods of Anarysis Theory	3	1	4
BP702T	Industrial PharmacyII – Theory	3	1	4
BP703T	Pharmacy Practice – Theory	2	1	4
BP704T	Novel Drug Delivery System – Theory			2
BP705P	Instrumental Methods of Analysis – Practical	12		6
BP706PS	Practice School*	12		24
	Total	28	5	24

* Non University Examination (NUE)

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Table-VIII: Course o	f study fo	or semester	vm
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Course	Name of the course	No. of hours	Tutorial	Credit points
code	Di estatistica and Research Methodology	3	1	4
BP8011	Biostatistics and Research Methodology	3	1	4
BP802T	Social and Preventive Pharmacy	5		
BP803ET	Pharma Marketing Management		- (a)	
BP804ET	Pharmaceutical Regulatory Science		1 + 1 = 2	
BP805ET	Pharmacovigilance			41.000
	Quality Control and Standardization of	3 + 3 = 6		4 + 4 = 8
BP806ET	Herbals			
BP807ET	Computer Aided Drug Design			
BP808ET	Cell and Molecular Biology			1.1.2
BP809ET	Cosmetic Science			
BP810ET	Experimental Pharmacology			
BP811ET	Advanced Instrumentation Techniques			
BP812ET	Dietary Supplements and Nutraceuticals			6
BP813PW	Project Work	12	-	0
DI 0151 W	Total	24	4	22

Table-IX: Semester wise credits distribution

Semester	Credit Points
J	27/293/30#
I	29
	26
IV	28
V	26
VI	26
VII	24
VIII	22
Entropy righter Co curricular activities	01*
Extracumentary Co currential activities	209/211 ³ /212 [#]

* The credit points assigned for extracurricular and or co-curricular activities shall be given by the Principals of the colleges and the same shall be submitted to the University. The criteria to acquire this credit point shall be defined by the colleges from time to time.

^{\$}Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics course.

[#]Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology course.

Course Structure & Syllabi for Pre-PhD



INVERTIS INSTITUTE OF PHARMACY, INVERTIS UNIVERSITY

BAREILLY

Course Structure and Syllabi for Pre-PhD

Part I

Compulsory for all

Credit: 04

S.No Paper	Paper Code	
1.	Research Methodology	PhDRM 101

Part II

Choose any one subject of the following

Credit: 04

S No	Paper	Paper Code
1	Advanced Pharmaceutics	PhDPH 102
<u>1.</u> 2	Modern Pharmaceutical Sciences	PhDPH 103
3	Advanced Pharmacology and Toxicology	PhDPH 104
<u>.</u>	Biological Screening Method	PhDPH 105
5	Advanced Medicinal Chemistry	PhDPH 106
6	Modern Pharmaceutical Chemistry	PhDPH 107
7	Modern Pharmacogonosy	PhDPH 108
8	Phytochemistry and Phytopharmaceuticals	PhDPH 109

Note: (i) Part II paper will be chosen by the research scholar on the advice of the Supervisor/Co-Supervisor(s).

(ii) Evaluation of the course will be based on university ordinance.

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