

Scheme and Syllabus

B. Pharmacy

Batch 2017 onwards



PTU

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By
Department of Academics

IK Gujral Punjab Technical University

First Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP101T	Human Anatomy and Physiology I–Theory	3+1	--	25	75	100	4
BP102T	Pharmaceutical Analysis I – Theory	3+1	--	25	75	100	4
BP103T	Pharmaceutics I – Theory	3+1	--	25	75	100	4
BP104T	Pharmaceutical Inorganic Chemistry –Theory	3+1	--	25	75	100	4
BP105T	Communication skills – Theory *	2	--	15	35	50	2
BP106RBT / BP106RMT	Remedial Biology/ Remedial Mathematics – Theory*	2	--	15	35	50	2
BP107P	Human Anatomy and Physiology –Practical	--	4	15	35	50	2
BP108P	Pharmaceutical Analysis – Practical	--	4	15	35	50	2
BP109P	Pharmaceutics I – Practical	--	4	15	35	50	2
BP110P	Pharmaceutical Inorganic Chemistry – Practical	--	4	15	35	50	2
BP111P	Communication skills – Practical*	--	2	10	15	25	1
BP112RBP	Remedial Biology – Practical*	--	2	10	15	25	1
Total		18/20^{\$}/20[#]	18/18^{\$}/20[#]	185/200^{\$}/210[#]	490/525^{\$}/540[#]	675/725^{\$}/750[#]	27/29^{\$}/30[#]

- \$ Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM) course.
- # Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB) course.
- * Non University Examination (NUE).

Second Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP201T	Human Anatomy and Physiology II – Theory	3+1	--	25	75	100	4
BP202T	Pharmaceutical Organic Chemistry I – Theory	3+1	--	25	75	100	4
BP203T	Biochemistry – Theory	3+1	--	25	75	100	4
BP204T	Pathophysiology – Theory	3+1	--	25	75	100	4
BP205T	Computer Applications in Pharmacy – Theory *	3	--	25	50	75	3
BP206T	Environmental sciences – Theory *	3	--	25	50	75	3
BP207P	Human Anatomy and Physiology II –Practical	--	4	15	35	50	2
BP208P	Pharmaceutical Organic Chemistry I– Practical	--	4	15	35	50	2
BP209P	Biochemistry – Practical	--	4	15	35	50	2
BP210P	Computer Applications in Pharmacy – Practical*	--	2	10	15	25	1
Total		22	14	205	520	725	29

- * Non University Examination (NUE).

Third Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP301T	Pharmaceutical Organic Chemistry II – Theory	3+1	--	25	75	100	4
BP302T	Physical Pharmaceutics I – Theory	3+1	--	25	75	100	4
BP303T	Pharmaceutical Microbiology – Theory	3+1	--	25	75	100	4
BP304T	Pharmaceutical Engineering – Theory	3+1	--	25	75	100	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	--	4	15	35	50	2
BP306P	Physical Pharmaceutics I – Practical	--	4	15	35	50	2
BP307P	Pharmaceutical Microbiology – Practical	--	4	15	35	50	2
BP308P	Pharmaceutical Engineering – Practical	--	4	15	35	50	2
Total		16	16	160	440	600	24

Fourth Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP401T	Pharmaceutical Organic Chemistry III– Theory	3+1	--	25	75	100	4
BP402T	Medicinal Chemistry I – Theory	3+1	--	25	75	100	4
BP403T	Physical Pharmaceutics II – Theory	3+1	--	25	75	100	4
BP404T	Pharmacology I – Theory	3+1	--	25	75	100	4
BP405T	Pharmacognosy and Phytochemistry I– Theory	3+1	--	25	75	100	4
BP406P	Medicinal Chemistry I – Practical	--	4	15	35	50	2
BP407P	Physical Pharmaceutics II – Practical	--	4	15	35	50	2
BP408P	Pharmacology I – Practical	--	4	15	35	50	2
BP409P	Pharmacognosy and Phytochemistry I – Practical	--	4	15	35	50	2
Total		20	16	185	515	700	28

Fifth Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP501T	Medicinal Chemistry II – Theory	3+1	--	25	75	100	4
BP502T	Industrial Pharmacy I– Theory	3+1	--	25	75	100	4
BP503T	Pharmacology II – Theory	3+1	--	25	75	100	4
BP504T	Pharmacognosy and Phytochemistry II– Theory	3+1	--	25	75	100	4
BP505T	Pharmaceutical Jurisprudence – Theory	3+1	--	25	75	100	4
BP506P	Industrial Pharmacy I – Practical	--	4	15	35	50	2
BP507P	Pharmacology II – Practical	--	4	15	35	50	2
BP508P	Pharmacognosy and Phytochemistry II – Practical	--	4	15	35	50	2
Total		20	12	170	480	650	26

Sixth Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP601T	Medicinal Chemistry III – Theory	3+1	--	25	75	100	4
BP602T	Pharmacology III – Theory	3+1	--	25	75	100	4
BP603T	Herbal Drug Technology – Theory	3+1	--	25	75	100	4
BP604T	Biopharmaceutics and Pharmacokinetics – Theory	3+1	--	25	75	100	4
BP605T	Pharmaceutical Biotechnology – Theory	3+1	--	25	75	100	4
BP606T	Quality Assurance –Theory	3+1	--	25	75	100	4
BP607P	Medicinal chemistry III – Practical	--	4	15	35	50	2
BP608P	Pharmacology III – Practical	--	4	15	35	50	2
BP609P	Herbal Drug Technology – Practical	--	4	15	35	50	2
Total		24	12	195	555	750	30

Seventh Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP701T	Instrumental Methods of Analysis – Theory	3+1	--	25	75	100	4
BP702T	Industrial Pharmacy II – Theory	3+1	--	25	75	100	4
BP703T	Pharmacy Practice – Theory	3+1	--	25	75	100	4
BP704T	Novel Drug Delivery System – Theory	3+1	--	25	75	100	4
BP705P	Instrumental Methods of Analysis – Practical	--	4	15	35	50	2
BP706PS	Practice School*	--	12	25	125	150	6
Total		16	16	140	460	600	24

- * Non University Examination (NUE).

Eighth Semester

Course Code	Course Name	L+T	P	Marks			Credits
				Internal	External	Total	
BP801T	Biostatistics and Research Methodology	3+1	--	25	75	100	4
BP802T	Social and Preventive Pharmacy	3+1	--	25	75	100	4
BP803ET	Pharma Marketing Management	3+1 + 3+1 = 8	--	25+25 = 50	75+75 = 150	100+100 = 200	4+4 = 8
BP804ET	Pharmaceutical Regulatory Science						
BP805ET	Pharmacovigilance						
BP806ET	Quality Control and Standardization of Herbals						
BP807ET	Computer Aided Drug Design						
BP808ET	Cell and Molecular Biology						
BP809ET	Cosmetic Science						
BP810ET	Experimental Pharmacology						
BP811ET	Advanced Instrumentation Techniques						
BP812ET	Dietary Supplements and Nutraceuticals						
BP813ET	Pharmaceutical Product Development						
BP814PW	Project Work	--	12	--	150	150	6
Total		16	12	100	450	550	22

Semester Wise Credit Distribution

Semester	Credit Points
First	27/29 ^{\$} /30 [#]
Second	29
Third	24
Fourth	28
Fifth	26
Sixth	30
Seventh	24
Eighth	22
Extracurricular/ Co curricular activities	01*
Total Credit Points for the program	211/213^{\$}/214[#]

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- # Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB) course.
- * 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.

Program Committee

- ❖ The B. Pharm. program shall have a Program Committee constituted by the Head of the institution in consultation with all the Heads of the departments.
- ❖ The composition of the Program Committee shall be as follows:
 - a) A senior teacher shall be the Chairperson.
 - b) One Teacher from each department handling B.Pharm courses
 - c) Four student representatives of the program (one from each academic year), nominated by the Head of the Institution

Duties of the Program Committee

1. Periodically reviewing the progress of the classes
2. Discussing the problems concerning curriculum, syllabus and the conduct of classes
3. Discussing with the course teachers on the nature and scope of assessment for the course and the same shall be announced to the students at the beginning of respective semesters
4. Communicating its recommendation to the Head of the Institution on Academic Matters
5. The Program Committee shall meet at least thrice in a semester preferably at the end of each Sessionalexam (Internal Assessment) and before the end semester exam

Industrial Training (Desirable)

- ❖ Every candidate shall be required to work for at least 150 hours spread over four weeks in a Pharmaceutical Industry/Hospital. It includes Production unit, Quality Control department, Quality Assurance Department, Analytical laboratory, Chemical manufacturing unit, Pharmaceutical R&D, Hospital (Clinical Pharmacy), Clinical Research Organization, Community Pharmacy, etc.
- ❖ Training will be after the 6th Semester and before the commencement of 7th Semester.
- ❖ Student shall submit satisfactory report of such work and certificate duly signed by the authority of training organization to the Head of the Institute.

End Semester Examinations

- ❖ The End Semester Examinations for each theory and practical course through semesters 1 to 8 shall be conducted by the University except for the subjects with asterix symbol (*) in Schemes of Semester 1 and 2 for which examinations shall be conducted by the subject experts at college level and the marks/grades shall be submitted to the University.

Sessional Exams

- ❖ Two Sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the college(s).
- ❖ The average marks of two Sessional exams shall be computed for internal assessment.
- ❖ Sessional exam shall be **conducted for 30 marks** for theory and shall be **computed for 15 marks**.
- ❖ Sessional exam for practical shall be **conducted for 40 marks** and shall be **computed for 10 marks**.

Question Paper Pattern for Theory Sessional Examinations

For Subjects Having University Examination

Multiple Choice Questions (MCQs) OR Objective Type Questions (5 x 2) (Answer all the questions)	10 x 1 = 10 OR 05 x 2 = 10
Short Answers (Answer 2 out of 3)	2 x 5 = 10
Long Answers (Answer 1 out of 2)	1 x 10 = 10
Total	30 Marks

For Subjects Having Non University Examination

Short Answers (Answer 4 out of 6)	4 x 5 = 20
Long Answers (Answer 1 out of 2)	1 x 10 = 10
Total	30 Marks

Question Paper Pattern for Practical Sessional Examinations

Synopsis	10
Experiments	25
Viva voce	05
Total	40 Marks

Internal Assessment

- ❖ The internal assessment will have two components i.e. **Continuous Mode** and **Sessional Exams**

1. For Theory Courses having Internal of 25 Marks the scheme of internal award is:

- Sessional Exams: 15 Marks
- Continuous Mode: 10 Marks

Continuous Mode Scheme

Criteria	Maximum Marks
*Attendance (as per table given below)	4
Academic activities (Average of any 3 activities e.g. quiz, assignment, open book test, field work, group discussion and seminar)	3
Student – Teacher interaction	3
Total	10

2. For Theory Courses having Internal of 15 Marks the scheme of internal award is:

- Sessional Exams: 10 Marks
- Continuous Mode: 05 Marks

Continuous Mode Scheme

Criteria	Maximum Marks
*Attendance (as per table given below)	2
Academic activities (Average of any 3 activities e.g. quiz, assignment, open book test, field work, group discussion and seminar)	1.5
Student – Teacher interaction	1.5
Total	5

3. For Practical Courses having Internal of 15 Marks the scheme of internal award is:

- Sessional Exams: 10 Marks
- Continuous Mode: 05 Marks

Continuous Mode Scheme

Criteria	Maximum Marks
*Attendance (as per table given below)	2
Based on Practical Records, Regular viva voce, etc.	3
Total	5

4. For Practical Courses having Internal of 10 Marks the scheme of internal award is:

- Sessional Exams: 05 Marks
- Continuous Mode: 05 Marks

Continuous Mode Scheme

Criteria	Maximum Marks
*Attendance (as per table given below)	2
Based on Practical Records, Regular viva voce, etc.	3
Total	5

***Guidelines for the Allotment of Marks for Attendance**

Percentage of Attendance	Theory (Attendance Maximum Marks 04)	Theory (Attendance Maximum Marks 02)	Practical (Attendance Maximum Marks 02)
95 – 100	4	2	2
90 – 94	3	1.5	1.5
85 – 89	2	1	1
80 – 84	1	0.5	0.5
Less than 80	0	0	0