



**JNTUK KAKINADA**

Rules & Syllabus for the Bachelor  
of Pharmacy (B. Pharm) Course  
as approved by  
Pharmacy Council of India  
New Delhi

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

## **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 semester shall 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.

## **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 Project over the duration of eight semesters. The credits are distributed semester-wise 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.

### 9. 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.

**Table-I: Course of study for semester I**

| Course code          | Name of the course                                  | No. of hours                            | Tutorial | Credit points                           |
|----------------------|---|---|----------|---|
| BP101T               | Human Anatomy and Physiology I– Theory              | 3                                       | 1        | 4                                       |
| BP102T               | Pharmaceutical Analysis I – Theory                  | 3                                       | 1        | 4                                       |
| BP103T               | Pharmaceutics I – Theory                            | 3                                       | 1        | 4                                       |
| BP104T               | Pharmaceutical Inorganic Chemistry – Theory         | 3                                       | 1        | 4                                       |
| BP105T               | Communication skills – Theory *                     | 2                                       | -        | 2                                       |
| BP106RBT<br>BP106RMT | Remedial Biology/<br>Remedial Mathematics – Theory* | 2                                       | -        | 2                                       |
| BP107P               | Human Anatomy and Physiology – Practical            | 4                                       | -        | 2                                       |
| BP108P               | Pharmaceutical Analysis I – Practical               | 4                                       | -        | 2                                       |
| BP109P               | Pharmaceutics I – Practical                         | 4                                       | -        | 2                                       |
| BP110P               | Pharmaceutical Inorganic Chemistry – Practical      | 4                                       | -        | 2                                       |
| BP111P               | Communication skills – Practical*                   | 2                                       | -        | 1                                       |
| BP112RBP             | Remedial Biology – Practical*                       | 2                                       | -        | 1                                       |
| <b>Total</b>         |   | <b>32/34<sup>§</sup>/36<sup>#</sup></b> | <b>4</b> | <b>27/29<sup>§</sup>/30<sup>#</sup></b> |

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

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

\* Non University Examination (NUE)

**Table-II: Course of study for semester II**

| <b>Course Code</b> | <b>Name of the course</b>                      | <b>No. of hours</b> | <b>Tutorial</b> | <b>Credit points</b> |
|--------------------|--|---------------------|-----------------|----------------------|
| BP201T             | Human Anatomy and Physiology II – Theory       | 3                   | 1               | 4                    |
| BP202T             | Pharmaceutical Organic Chemistry I – Theory    | 3                   | 1               | 4                    |
| BP203T             | 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                    |
| <b>Total</b>       |  | <b>32</b>           | <b>4</b>        | <b>29</b>            |

\*Non University Examination (NUE)

**Table-III: Course of study for semester III**

| <b>Course code</b> | <b>Name of the course</b>                       | <b>No. of hours</b> | <b>Tutorial</b> | <b>Credit points</b> |
|--------------------|---|---------------------|-----------------|----------------------|
| BP301T             | 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                    |
| <b>Total</b>       |   | <b>28</b>           | <b>4</b>        | <b>24</b>            |

**Table-IV: Course of study for semester IV**

| <b>Course code</b> | <b>Name of the course</b>                      | <b>No. of hours</b> | <b>Tutorial</b> | <b>Credit points</b> |
|--------------------|--|---------------------|-----------------|----------------------|
| 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                    |
| <b>Total</b>       |  | <b>31</b>           | <b>5</b>        | <b>28</b>            |

**Table-V: Course of study for semester V**

| <b>Course code</b> | <b>Name of the course</b>                       | <b>No. of hours</b> | <b>Tutorial</b> | <b>Credit points</b> |
|--------------------|---|---------------------|-----------------|----------------------|
| 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 PharmacyI – Practical                | 4                   | -               | 2                    |
| BP507P             | Pharmacology II – Practical                     | 4                   | -               | 2                    |
| BP508P             | Pharmacognosy and Phytochemistry II – Practical | 4                   | -               | 2                    |
| <b>Total</b>       |   | <b>27</b>           | <b>5</b>        | <b>26</b>            |

**Table-VI: Course of study for semester VI**

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

**Table-VII: Course of study for semester VII**

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

\* Non University Examination (NUE)

**Table-VIII: Course of study for semester VIII**

| Course code  | Name of the course                             | No. of hours | Tutorial  | Credit points |
|--------------|--|--------------|-----------|---------------|
| BP801T       | Biostatistics and Research Methodology         | 3            | 1         | 4             |
| BP802T       | Social and Preventive Pharmacy                 | 3            | 1         | 4             |
| BP803ET      | Pharma Marketing Management                    | 3 + 3 = 6    | 1 + 1 = 2 | 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         |              |           |               |
| BP813PW      | Project Work                                   | 12           | -         | 6             |
| <b>Total</b> |  | <b>24</b>    | <b>4</b>  | <b>22</b>     |

**Table-IX: Semester wise credits distribution**

| Semester                                   | Credit Points                              |
|--|--|
| I  | 27/29 <sup>§</sup> /30 <sup>#</sup>        |
| II   | 29   |
| III  | 26   |
| IV   | 28   |
| V  | 26   |
| VI   | 26   |
| VII  | 24   |
| VIII                                       | 22   |
| Extracurricular/ Co curricular activities  | 01*  |
| <b>Total credit points for the program</b> | <b>209/211<sup>§</sup>/212<sup>#</sup></b> |

\* 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.

<sup>§</sup>Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics course.

<sup>#</sup>Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology course.



## **10. Program Committee**

1. 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.

2. The composition of the Program Committee shall be as follows:

A senior teacher shall be the Chairperson; One Teacher from each department handling B.Pharm courses; and four student representatives of the program (one from each academic year), nominated by the Head of the institution.

3. Duties of the Program Committee:

- i. Periodically reviewing the progress of the classes.
- ii. Discussing the problems concerning curriculum, syllabus and the conduct of classes.
- iii. 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.
- iv. Communicating its recommendation to the Head of the institution on academic matters.
- v. 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.

## **11. Examinations/Assessments**

The scheme for internal assessment and end semester examinations is given in Table – X.

### **11.1. End semester examinations**

The End Semester Examinations for each theory and practical coursethrough semesters I to VIII shall be conducted by the university except for the subjects with asterix symbol (\*) in table I and II for which examinations shall be conducted by the subject experts at college level and the marks/grades shall be submitted to the university.

**Tables-X: Schemes for internal assessments and end semester examinations semester wise**

**Semester I**

| Course<br>code       | Name of the course                             | Internal Assessment                  |   |   |   | End Semester Exams                          |  | Total<br>Marks                              |
|----------------------|--|--------------------------------------|---|---|---|---|--|---|
|                      |  | Continuous<br>Mode                   | Sessional Exams                         |   | Total                                   | Marks                                       | Duration                                       |   |
|                      |  |                                      | Marks                                   | Duration                                    |   |   |  |   |
| BP101T               | Human Anatomy and Physiology I– Theory         | 10                                   | 15                                      | 1 Hr  | 25                                      | 75  | 3 Hrs  | 100   |
| BP102T               | Pharmaceutical Analysis I – Theory             | 10                                   | 15                                      | 1 Hr  | 25                                      | 75  | 3 Hrs  | 100   |
| BP103T               | Pharmaceutics I – Theory                       | 10                                   | 15                                      | 1 Hr  | 25                                      | 75  | 3 Hrs  | 100   |
| BP104T               | Pharmaceutical Inorganic Chemistry – Theory    | 10                                   | 15                                      | 1 Hr  | 25                                      | 75  | 3 Hrs  | 100   |
| BP105T               | Communication skills – Theory *                | 5                                    | 10                                      | 1 Hr  | 15                                      | 35  | 1.5 Hrs  | 50  |
| BP106RBT<br>BP106RMT | Remedial Biology/<br>Mathematics – Theory*     | 5                                    | 10                                      | 1 Hr  | 15                                      | 35  | 1.5 Hrs  | 50  |
| BP107P               | Human Anatomy and Physiology – Practical       | 5                                    | 10                                      | 4 Hrs                                       | 15                                      | 35  | 4 Hrs  | 50  |
| BP108P               | Pharmaceutical Analysis I – Practical          | 5                                    | 10                                      | 4 Hrs                                       | 15                                      | 35  | 4 Hrs  | 50  |
| BP109P               | Pharmaceutics I – Practical                    | 5                                    | 10                                      | 4 Hrs                                       | 15                                      | 35  | 4 Hrs  | 50  |
| BP110P               | Pharmaceutical Inorganic Chemistry – Practical | 5                                    | 10                                      | 4 Hrs                                       | 15                                      | 35  | 4 Hrs  | 50  |
| BP111P               | Communication skills – Practical*              | 5                                    | 5                                       | 2 Hrs                                       | 10                                      | 15  | 2 Hrs  | 25  |
| BP112RBP             | Remedial Biology – Practical*                  | 5                                    | 5                                       | 2 Hrs                                       | 10                                      | 15  | 2 Hrs  | 25  |
| Total                |  | 70/75 <sup>\$</sup> /80 <sup>#</sup> | 115/125 <sup>\$</sup> /130 <sup>#</sup> | 23/24 <sup>\$</sup> /26 <sup>#</sup><br>Hrs | 185/200 <sup>\$</sup> /210 <sup>#</sup> | 490/525 <sup>\$</sup> /<br>540 <sup>#</sup> | 31.5/33 <sup>\$</sup> /<br>35 <sup>#</sup> Hrs | 675/725 <sup>\$</sup> /<br>750 <sup>#</sup> |

<sup>#</sup>Applicable ONLY for the students studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB)course.

<sup>\$</sup>Applicable ONLY for the students studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM)course.

\* Non University Examination (NUE)

## Semester II

| Course code | Name of the course                             | Internal Assessment |                 |          |       | End Semester Exams |          | Total Marks |
|-------------|--|---------------------|-----------------|----------|-------|--------------------|----------|-------------|
|             |  | Continuous Mode     | Sessional Exams |          | Total | Marks              | Duration |             |
|             |  |                     | Marks           | Duration |       |                    |          |             |
| BP201T      | Human Anatomy and Physiology II – Theory       | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP202T      | Pharmaceutical Organic Chemistry I – Theory    | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP203T      | Biochemistry – Theory                          | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP204T      | Pathophysiology – Theory                       | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP205T      | Computer Applications in Pharmacy – Theory*    | 10                  | 15              | 1 Hr     | 25    | 50                 | 2 Hrs    | 75          |
| BP206T      | Environmental sciences – Theory*               | 10                  | 15              | 1 Hr     | 25    | 50                 | 2 Hrs    | 75          |
| BP207P      | Human Anatomy and Physiology II –Practical     | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP208P      | Pharmaceutical Organic Chemistry I– Practical  | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP209P      | Biochemistry – Practical                       | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP210P      | Computer Applications in Pharmacy – Practical* | 5                   | 5               | 2 Hrs    | 10    | 15                 | 2 Hrs    | 25          |
| Total       |  | 80                  | 125             | 20 Hrs   | 205   | 520                | 30 Hrs   | 725         |

\* The subject experts at college level shall conduct examinations

### Semester III

| Course code | Name of the course                              | Internal Assessment |                 |          |       | End Semester Exams |          | Total Marks |
|-------------|---|---------------------|-----------------|----------|-------|--------------------|----------|-------------|
|             |   | Continuous Mode     | Sessional Exams |          | Total | Marks              | Duration |             |
|             |   |                     | Marks           | Duration |       |                    |          |             |
| BP301T      | Pharmaceutical Organic Chemistry II – Theory    | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP302T      | PhysicalPharmaceuticsI –Theory                  | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP303T      | Pharmaceutical Microbiology – Theory            | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP304T      | Pharmaceutical Engineering – Theory             | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP305P      | Pharmaceutical Organic Chemistry II – Practical | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| BP306P      | Physical Pharmaceutics I – Practical            | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| BP307P      | Pharmaceutical Microbiology – Practical         | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| BP308P      | Pharmaceutical Engineering – Practical          | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| Total       |   | 60                  | 100             | 20       | 160   | 440                | 28Hrs    | 600         |

### Semester IV

| Course code | Name of the course                           | Internal Assessment |                 |          |       | End Semester Exams |          | Total Marks |
|-------------|--|---------------------|-----------------|----------|-------|--------------------|----------|-------------|
|             |  | Continuous Mode     | Sessional Exams |          | Total | Marks              | Duration |             |
|             |  |                     | Marks           | Duration |       |                    |          |             |
| BP401T      | Pharmaceutical Organic Chemistry III– Theory | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP402T      | Medicinal Chemistry I – Theory               | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP403T      | Physical Pharmaceutics II – Theory           | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP404T      | Pharmacology I – Theory                      | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP405T      | Pharmacognosy I – Theory                     | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP406P      | Medicinal Chemistry I – Practical            | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| BP407P      | Physical Pharmaceutics II – Practical        | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP408P      | Pharmacology I – Practical                   | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP409P      | Pharmacognosy I – Practical                  | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| Total       |  | 70                  | 115             | 21 Hrs   | 185   | 515                | 31 Hrs   | 700         |

### Semester V

| Course code | Name of the course                    | Internal Assessment |                 |          |       | End Semester Exams |          | Total Marks |
|-------------|---------------------------------------|---------------------|-----------------|----------|-------|--------------------|----------|-------------|
|             |                                       | Continuous Mode     | Sessional Exams |          | Total | Marks              | Duration |             |
|             |                                       |                     | Marks           | Duration |       |                    |          |             |
| BP501T      | Medicinal Chemistry II – Theory       | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP502T      | Industrial PharmacyI– Theory          | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP503T      | Pharmacology II – Theory              | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP504T      | Pharmacognosy II – Theory             | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP505T      | Pharmaceutical Jurisprudence – Theory | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP506P      | Industrial PharmacyI– Practical       | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| BP507P      | Pharmacology II – Practical           | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| BP508P      | Pharmacognosy II – Practical          | 5                   | 10              | 4 Hr     | 15    | 35                 | 4 Hrs    | 50          |
| Total       |                                       | 65                  | 105             | 17 Hr    | 170   | 480                | 27 Hrs   | 650         |

## Semester VI

| Course code | Name of the course                             | Internal Assessment |                 |          |       | End Semester Exams |          | Total Marks |
|-------------|--|---------------------|-----------------|----------|-------|--------------------|----------|-------------|
|             |  | Continuous Mode     | Sessional Exams |          | Total | Marks              | Duration |             |
|             |  |                     | Marks           | Duration |       |                    |          |             |
| BP601T      | Medicinal Chemistry III – Theory               | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP602T      | Pharmacology III – Theory                      | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP603T      | Herbal Drug Technology – Theory                | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP604T      | Biopharmaceutics and Pharmacokinetics – Theory | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP605T      | Pharmaceutical Biotechnology– Theory           | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP606T      | Quality Assurance– Theory                      | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP607P      | Medicinal chemistry III – Practical            | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP608P      | Pharmacology III – Practical                   | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP609P      | Herbal Drug Technology – Practical             | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| Total       |  | 75                  | 120             | 18 Hrs   | 195   | 555                | 30 Hrs   | 750         |

## Semester VII

| Course code | Name of the course                           | Internal Assessment |                 |          |       | End Semester Exams |          | Total Marks |
|-------------|--|---------------------|-----------------|----------|-------|--------------------|----------|-------------|
|             |  | Continuous Mode     | Sessional Exams |          | Total | Marks              | Duration |             |
|             |  |                     | Marks           | Duration |       |                    |          |             |
| BP701T      | Instrumental Methods of Analysis – Theory    | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP702T      | Industrial Pharmacy – Theory                 | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP703T      | Pharmacy Practice – Theory                   | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP704T      | Novel Drug Delivery System – Theory          | 10                  | 15              | 1 Hr     | 25    | 75                 | 3 Hrs    | 100         |
| BP705 P     | Instrumental Methods of Analysis – Practical | 5                   | 10              | 4 Hrs    | 15    | 35                 | 4 Hrs    | 50          |
| BP706 PS    | Practice School*                             | 25                  | -               | -        | 25    | 125                | 5 Hrs    | 150         |
| Total       |  | 70                  | 70              | 8Hrs     | 140   | 460                | 21 Hrs   | 600         |

\* The subject experts at college level shall conduct examinations



### Semester VIII

| Course code | Name of the course                                      | Internal Assessment |                 |               |              | End Semester Exams |               | Total Marks     |
|-------------|---|---------------------|-----------------|---------------|--------------|--------------------|---------------|-----------------|
|             |   | Continuous Mode     | Sessional Exams |               | Total        | Marks              | Duration      |                 |
|             |   |                     | Marks           | Duration      |              |                    |               |                 |
| BP801T      | Biostatistics and Research Methodology – Theory         | 10                  | 15              | 1 Hr          | 25           | 75                 | 3 Hrs         | 100             |
| BP802T      | Social and Preventive Pharmacy – Theory                 | 10                  | 15              | 1 Hr          | 25           | 75                 | 3 Hrs         | 100             |
| BP803ET     | Pharmaceutical Marketing – Theory                       | 10 + 10 = 20        | 15 + 15 = 30    | 1 + 1 = 2 Hrs | 25 + 25 = 50 | 75 + 75 = 150      | 3 + 3 = 6 Hrs | 100 + 100 = 200 |
| BP804ET     | Pharmaceutical Regulatory Science – Theory              |                     |                 |               |              |                    |               |                 |
| BP805ET     | Pharmacovigilance – Theory                              |                     |                 |               |              |                    |               |                 |
| BP806ET     | Quality Control and Standardization of Herbals – Theory |                     |                 |               |              |                    |               |                 |
| BP807ET     | Computer Aided Drug Design – Theory                     |                     |                 |               |              |                    |               |                 |
| BP808ET     | Cell and Molecular Biology – Theory                     |                     |                 |               |              |                    |               |                 |
| BP809ET     | Cosmetic Science – Theory                               |                     |                 |               |              |                    |               |                 |
| BP810ET     | Experimental Pharmacology – Theory                      |                     |                 |               |              |                    |               |                 |
| BP811ET     | Advanced Instrumentation Techniques – Theory            |                     |                 |               |              |                    |               |                 |
| BP812PW     | Project Work  | -                   | -               | -             | -            | 150                | 4 Hrs         | 150             |

|              |           |           |              |            |            |               |            |
|--------------|-----------|-----------|--------------|------------|------------|---------------|------------|
| <b>Total</b> | <b>40</b> | <b>60</b> | <b>4 Hrs</b> | <b>100</b> | <b>450</b> | <b>16 Hrs</b> | <b>550</b> |
|--------------|-----------|-----------|--------------|------------|------------|---------------|------------|



### 11.2. Internal assessment: Continuous mode

The marks allocated for Continuous mode of Internal Assessment shall be awarded as per the scheme given below.

**Table-XI: Scheme for awarding internal assessment: Continuous mode**

| <b>Theory</b>   |                      |          |
|---|----------------------|----------|
| <b>Criteria</b>   | <b>Maximum Marks</b> |          |
| Attendance (Refer Table – XII)  | 4                    | 2        |
| Academic activities (Average of any 3 activities e.g. quiz, assignment, open book test, field work, group discussion and seminar) | 3                    | 1.5      |
| Student – Teacher interaction   | 3                    | 1.5      |
| <b>Total</b>  | <b>10</b>            | <b>5</b> |
| <b>Practical</b>  |                      |          |
| Attendance (Refer Table – XII)  | 2                    |          |
| Based on Practical Records, Regular viva voce, etc.   | 3                    |          |
| <b>Total</b>  | <b>5</b>             |          |

**Table- XII: Guidelines for the allotment of marks for attendance**

| <b>Percentage of Attendance</b> | <b>Theory</b> | <b>Practical</b> |
|---------------------------------|---------------|------------------|
| 95 – 100                        | 4             | 2                |
| 90 – 94                         | 3             | 1.5              |
| 85 – 89                         | 2             | 1                |
| 80 – 84                         | 1             | 0.5              |
| Less than 80                    | 0             | 0                |

#### 11.2.1. Sessional Exams

Two Sessional exams shall be conducted for each theory / practical course as per the schedule fixed by the college(s). The scheme of question paper for theory and practical Sessional examinations is given below. The average marks of two Sessional exams shall be computed for internal assessment as per the requirements given in tables – X.

Sessional exam shall be conducted for 30 marks for theory and shall be computed for 15 marks. Similarly 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

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

**For subjects having Non University Examination**

|                                       |   |             |
|---------------------------------------|---|-------------|
| I. Long Answers (Answer 1 out of 2)   | = | 1 x 10 = 10 |
| II. Short Answers (Answer 4 out of 6) | = | 4 x 5 = 20  |
|                                       |   | -----       |
| Total                                 | = | 30 marks    |
|                                       |   | -----       |

**Question paper pattern for practical sessional examinations**

|                 |   |          |
|-----------------|---|----------|
| I. Synopsis     | = | 10       |
| II. Experiments | = | 25       |
| III. Viva voce  | = | 05       |
|                 |   | -----    |
| Total           | = | 40 marks |
|                 |   | -----    |

**12. Promotion and award of grades**

A student shall be declared PASS and eligible for getting grade in a course of B.Pharm. program if he/she secures at least 50% marks in that particular course including internal assessment. For example, to be declared as PASS and to get grade, the student has to secure a minimum of 50 marks for the total of 100 including continuous mode of assessment and end semester theory examination and has to secure a minimum of 25 marks for the total 50 including internal assessment and end semester practical examination.

**13. Carry forward of marks**

In case a student fails to secure the minimum 50% in any Theory or Practical course as specified in 12, then he/she shall reappear for the end semester examination of that course. However his/her marks of the Internal Assessment shall be carried over and he/she shall be entitled for grade obtained by him/her on passing.

**14. Improvement of internal assessment**

A student shall have the opportunity to improve his/her performance only once in the Sessional exam component of the internal assessment. The re-conduct of the Sessional exam shall be completed before the commencement of next end semester theory examinations.

**15. Re-examination of end semester examinations**

Reexamination of end semester examinations shall be conducted as per the schedule given in table XIII. The exact dates of examinations shall be notified from time to time.

**Table-XIII: Tentative schedule of end semester examinations**

| Semester            | For Regular Candidates | For Failed Candidates |
|---------------------|------------------------|-----------------------|
| I, III, V and VII   | November / December    | May / June            |
| II, IV, VI and VIII | May / June             | November / December   |

**Question paper pattern for end semester theory examinations****For 75 marks paper**

I. Multiple Choice Questions(MCQs) = 20 x 1 = 20

OR

OR

Objective Type Questions (10 x 2) = 10 x 2 = 20

(Answer all the questions)

II. Long Answers (Answer 2 out of 3) = 2 x 10 = 20

III. Short Answers (Answer 7 out of 9) = 7 x 5 = 35

Total = 75 marks

**For 50 marks paper**

I. Long Answers (Answer 2 out of 3) = 2 x 10 = 20

II. Short Answers (Answer 6 out of 8) = 6 x 5 = 30

Total = 50 marks

**For 35 marks paper**

I. Long Answers (Answer 1 out of 2) = 1 x 10 = 10

II. Short Answers (Answer 5 out of 7) = 5 x 5 = 25

Total = 35 marks

**Question paper pattern for end semester practical examinations**

I. Synopsis = 5

II. Experiments = 25

III. Viva voce = 5

Total = 35 marks

**16. Academic Progression:**

No student shall be admitted to any examination unless he/she fulfills the norms given in

6. Academic progression rules are applicable as follows:

A student shall be eligible to carry forward all the courses of I, II and III semesters till the IV semester examinations. However, he/she shall not be eligible to attend the courses of V semester until all the courses of I and II semesters are successfully completed.

A student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of I, II, III and IV semesters are successfully completed.

A student shall be eligible to carry forward all the courses of V, VI and VII semesters till the VIII semester examinations. However, he/she shall not be eligible to get the course completion certificate until all the courses of I, II, III, IV, V and VI semesters are successfully completed.

A student shall be eligible to get his/her CGPA upon successful completion of the courses of I to VIII semesters within the stipulated time period as per the norms specified in 26.

A lateral entry student shall be eligible to carry forward all the courses of III, IV and V semesters till the VI semester examinations. However, he/she shall not be eligible to attend the courses of VII semester until all the courses of III and IV semesters are successfully completed.

A lateral entry student shall be eligible to carry forward all the courses of V, VI and VII semesters till the VIII semester examinations. However, he/she shall not be eligible to get the course completion certificate until all the courses of III, IV, V and VI semesters are successfully completed.

A lateral entry student shall be eligible to get his/her CGPA upon successful completion of the courses of III to VIII semesters within the stipulated time period as per the norms specified in 26.

Any student who has given more than 4 chances for successful completion of I / III semester courses and more than 3 chances for successful completion of II / IV semester courses shall be permitted to attend V / VII semester classes ONLY during the subsequent academic year as the case may be. In simpler terms there shall NOT be any ODD BATCH for any semester.

Note: Grade AB should be considered as failed and treated as one head for deciding academic progression. Such rules are also applicable for those students who fail to register for examination(s) of any course in any semester.

## 17. Grading of performances

### 17.1. Letter grades and grade points allocations:

Based on the performances, each student shall be awarded a final letter grade at the end of the semester for each course. The letter grades and their corresponding grade points are given in Table – XII.

**Table – XII: Letter grades and grade points equivalent to Percentage of marks and performances**

| Percentage of Marks Obtained | Letter Grade | Grade Point | Performance |
|------------------------------|--------------|-------------|-------------|
| 90.00 – 100                  | O            | 10          | Outstanding |
| 80.00 – 89.99                | A            | 9           | Excellent   |
| 70.00 – 79.99                | B            | 8           | Good        |
| 60.00 – 69.99                | C            | 7           | Fair        |
| 50.00 – 59.99                | D            | 6           | Average     |
| Less than 50                 | F            | 0           | Fail        |
| Absent                       | AB           | 0           | Fail        |

A learner who remains absent for any end semester examination shall be assigned a letter grade of AB and a corresponding grade point of zero. He/she should reappear for the said evaluation/examination in due course.

## 18. The Semester grade point average (SGPA)

The performance of a student in a semester is indicated by a number called ‘Semester Grade Point Average’ (SGPA). The SGPA is the weighted average of the grade points obtained in all the courses by the student during the semester. For example, if a student takes five courses (Theory/Practical) in a semester with credits C<sub>1</sub>, C<sub>2</sub>, C<sub>3</sub>, C<sub>4</sub> and C<sub>5</sub> and the student’s grade points in these courses are G<sub>1</sub>, G<sub>2</sub>, G<sub>3</sub>, G<sub>4</sub> and G<sub>5</sub>, respectively, and then students’ SGPA is equal to:

$$\text{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4G_4 + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

The SGPA is calculated to two decimal points. It should be noted that, the SGPA for any semester shall take into consideration the F and AB grade awarded in that semester. For example if a learner has a F or AB grade in course 4, the SGPA shall then be computed as:

$$\text{SGPA} = \frac{C_1G_1 + C_2G_2 + C_3G_3 + C_4 \text{ ZERO} + C_5G_5}{C_1 + C_2 + C_3 + C_4 + C_5}$$

### 19. Cumulative Grade Point Average (CGPA)

The CGPA is calculated with the SGPA of all the VIII semesters to two decimal points and is indicated in final grade report card/final transcript showing the grades of all VIII semesters and their courses. The CGPA shall reflect the failed status in case of F grade(s), till the course(s) is/are passed. When the course(s) is/are passed by obtaining a pass grade on subsequent examination(s) the CGPA shall only reflect the new grade and not the fail grades earned earlier. The CGPA is calculated as:

$$\text{CGPA} = \frac{C_1S_1 + C_2S_2 + C_3S_3 + C_4S_4 + C_5S_5 + C_6S_6 + C_7S_7 + C_8S_8}{C_1 + C_2 + C_3 + C_4 + C_5 + C_6 + C_7 + C_8}$$

where  $C_1, C_2, C_3, \dots$  is the total number of credits for semester I, II, III, .... and  $S_1, S_2, S_3, \dots$  is the SGPA of semester I, II, III, ....

### 20. Declaration of class

The class shall be awarded on the basis of CGPA as follows:

|                              |                          |
|------------------------------|--------------------------|
| First Class with Distinction | = CGPA of 7.50 and above |
| First Class                  | = CGPA of 6.00 to 7.49   |
| Second Class                 | = CGPA of 5.00 to 5.99   |

### 21. Project work

All the students shall undertake a project under the supervision of a teacher and submit a report. The area of the project shall directly relate any one of the elective subject opted by the student in semester VIII. The project shall be carried out in group not exceeding 5 in number. The project report shall be submitted in triplicate (typed & bound copy not less than 25 pages).

The internal and external examiner appointed by the University shall evaluate the project at the time of the Practical examinations of other semester(s). Students shall be evaluated in groups for four hours (i.e., about half an hour for a group of five students). The projects shall be evaluated as per the criteria given below.



***Evaluation of Dissertation Book:***

|                               |          |
|-------------------------------|----------|
| Objective(s) of the work done | 15 Marks |
| Methodology adopted           | 20 Marks |
| Results and Discussions       | 20 Marks |
| Conclusions and Outcomes      | 20 Marks |

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|              |                 |
|--------------|-----------------|
| <b>Total</b> | <b>75 Marks</b> |
|--------------|-----------------|

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***Evaluation of Presentation:***

|                            |          |
|----------------------------|----------|
| Presentation of work       | 25 Marks |
| Communication skills       | 20 Marks |
| Question and answer skills | 30 Marks |

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|              |                 |
|--------------|-----------------|
| <b>Total</b> | <b>75 Marks</b> |
|--------------|-----------------|

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*Explanation:* The 75 marks assigned to the dissertation book shall be same for all the students in a group. However, the 75 marks assigned for presentation shall be awarded based on the performance of individual students in the given criteria.

**22. 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. After the Semester – VI and before the commencement of Semester – VII, and shall submit satisfactory report of such work and certificate duly signed by the authority of training organization to the head of the institute.

**23. Practice School**

In the VII semester, every candidate shall undergo practice school for a period of 150 hours evenly distributed throughout the semester. The student shall opt any one of the domains for practice school declared by the program committee from time to time.

At the end of the practice school, every student shall submit a printed report (in triplicate) on the practice school he/she attended (not more than 25 pages). Along with the exams of semester VII, the report submitted by the student, knowledge and skills acquired by the student through practice school shall be evaluated by the subject experts at college level and grade point shall be awarded.

**24. Award of Ranks**

Ranks and Medals shall be awarded on the basis of final CGPA. However, candidates who fail in one or more courses during the B.Pharm program shall not be eligible for award of ranks. Moreover, the candidates should have completed the B. Pharm program in minimum prescribed number of years, (four years) for the award of Ranks.

**25. Award of degree**

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

**26. Duration for completion of the program of study**

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

**27. Re-admission after break of study**

Candidate who seeks re-admission to the program 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 program by paying the required fees.