



**UNIVERSITY**  
GWALIOR • MP • INDIA

“ CELEBRATING DREAMS ”

# **B. PHARM COURSE CURRICULUM**

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(2012-13 BATCH)

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# SCHEME OF TEACHING, EVALUATION AND CREDITS

## COURSE: B. PHARM (2012-13 Batch)

### SEMESTER – I

| S. No.       | Subject Name                                      | Subject Code | Teaching Load / Week (Hrs) |   |   | Credits Allotted |   |   | Total Credits | Maximum Marks Allotted |                      |    |           |     |           | Total Marks          |
|--------------|---|--------------|----------------------------|---|---|------------------|---|---|---------------|------------------------|----------------------|----|-----------|-----|-----------|----------------------|
|              |   |              | L                          | T | P | L                | T | P |               | Theory                 |                      |    | Practical |     |           |                      |
|              |   |              |                            |   |   |                  |   |   |               | End Sem                | Mid Sem <sup>#</sup> | CP | End Sem   | PE  | Int. Viva |                      |
| 1            | Professional Communication                        | PY1101       | 3                          | 1 | 0 | 3                | 1 | 0 | 4             | 40                     | 30                   | 30 | --        | --  | --        | 100                  |
| 2            | Computer Applications                             | PY1102       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200                  |
| 3            | Pharmaceutical Chemistry – I (Inorganic)          | PY1103       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200                  |
| 4            | Pharmaceutical Chemistry – II (Physical)          | PY1104       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200                  |
| 5            | Pharmaceutics – I (Introduction to Pharmaceutics) | PY1105       | 3                          | 1 | 0 | 3                | 1 | 0 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200                  |
| 6            | Remedial Mathematics*                             | PY1106       | 3                          | 1 | 0 | 3                | 1 | 0 | 4*            | 40                     | 30                   | 30 | ---       | --- | ---       | 100                  |
| 7            | Remedial Biology*                                 | PY1107       | 3                          | 0 | 3 | 3                | 0 | 1 | 4*            | 40                     | 30                   | 30 | 40        | 30  | 30        | 200                  |
| <b>Total</b> |   |              |                            |   |   |                  |   |   | <b>24*</b>    |                        |                      |    |           |     |           | <b>1000 / 1100**</b> |

**REMARKS**

\* Students from Medical stream will study Remedial Mathematics and those from non-Medical stream will study Remedial Biology

\*\* Students studying Remedial Mathematics will have 1000 total marks / Students studying Remedial Biology will have 1100 total marks

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

### SEMESTER – II

| S. No.       | Subject Name                                   | Subject Code | Teaching Load / Week (Hrs) |   |   | Credits Allotted |   |   | Total Credits | Maximum Marks Allotted |                      |    |           |    |           | Total Marks |
|--------------|--|--------------|----------------------------|---|---|------------------|---|---|---------------|------------------------|----------------------|----|-----------|----|-----------|-------------|
|              |  |              | L                          | T | P | L                | T | P |               | Theory                 |                      |    | Practical |    |           |             |
|              |  |              |                            |   |   |                  |   |   |               | End Sem                | Mid Sem <sup>#</sup> | CP | End Sem   | PE | Int. Viva |             |
| 1            | Applied Mathematics and Biostatistics          | PY2101       | 3                          | 1 | 0 | 3                | 1 | 0 | 4             | 40                     | 30                   | 30 | --        | -- | --        | 100         |
| 2            | Human Anatomy, Physiology and Health Education | PY2102       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 3            | Pharmaceutical Chemistry – III (Organic)       | PY2103       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 4            | Pharmaceutics – II (Physical Pharmacy)         | PY2104       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 5            | Pharmacognosy - I                              | PY2105       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| <b>Total</b> |  |              |                            |   |   |                  |   |   | <b>20</b>     |                        |                      |    |           |    |           | <b>900</b>  |

**REMARKS**

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

### SEMESTER – III

| S. No.       | Subject Name  | Subject Code | Teaching Load / Week (Hrs) |   |   | Credits Allotted |   |   | Total Credits | Maximum Marks Allotted |                      |    |           |    |           | Total Marks |
|--------------|---|--------------|----------------------------|---|---|------------------|---|---|---------------|------------------------|----------------------|----|-----------|----|-----------|-------------|
|              |   |              | L                          | T | P | L                | T | P |               | Theory                 |                      |    | Practical |    |           |             |
|              |   |              |                            |   |   |                  |   |   |               | End Sem                | Mid Sem <sup>#</sup> | CP | End Sem   | PE | Int. Viva |             |
| 1            | Pharmaceutics – III (Unit Operations – I)                     | PY3101       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 2            | Human Anatomy, Physiology and Health Education – II           | PY3102       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 3            | Pharmaceutical Chemistry – IV (Chemistry of Natural Products) | PY3103       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 4            | Pharmaceutical Microbiology                                   | PY3104       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| 5            | Pharmacognosy – II  | PY3105       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30 | 30        | 200         |
| <b>Total</b> |   |              |                            |   |   |                  |   |   | <b>20</b>     |                        |                      |    |           |    |           | <b>1000</b> |

#### REMARKS

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

### SEMESTER – IV

| S. No.       | Subject Name                                | Subject Code | Teaching Load / Week (Hrs) |   |   | Credits Allotted |   |   | Total Credits | Maximum Marks Allotted |                      |    |           |     |           | Total Marks |
|--------------|---|--------------|----------------------------|---|---|------------------|---|---|---------------|------------------------|----------------------|----|-----------|-----|-----------|-------------|
|              |   |              | L                          | T | P | L                | T | P |               | Theory                 |                      |    | Practical |     |           |             |
|              |   |              |                            |   |   |                  |   |   |               | End Sem                | Mid Sem <sup>#</sup> | CP | End Sem   | PE  | Int. Viva |             |
| 1            | Pathophysiology of Common Diseases          | PY4101       | 3                          | 1 | 0 | 3                | 1 | 0 | 4             | 40                     | 30                   | 30 | ---       | --- | ---       | 100         |
| 2            | Pharmaceutics – IV (Unit Operations – II)   | PY4102       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200         |
| 3            | Pharmaceutical Chemistry – V (Biochemistry) | PY4103       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200         |
| 4            | Pharmaceutical Analysis – I                 | PY4104       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200         |
| 5            | Pharmaceutics – V (Dosage Form Design)      | PY4105       | 3                          | 0 | 3 | 3                | 0 | 1 | 4             | 40                     | 30                   | 30 | 40        | 30  | 30        | 200         |
| <b>Total</b> |   |              |                            |   |   |                  |   |   | <b>20</b>     |                        |                      |    |           |     |           | <b>900</b>  |

#### REMARKS

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

## SEMESTER – V

| S. No.       | Subject Name  | Subject Code | Teaching Load / Week (Hrs) |     |     | Credits Allotted |     |     | Total Credits | Maximum Marks Allotted |                      |     |           |     |           | Total Marks |
|--------------|---|--------------|----------------------------|-----|-----|------------------|-----|-----|---------------|------------------------|----------------------|-----|-----------|-----|-----------|-------------|
|              |   |              | L                          | T   | P   | L                | T   | P   |               | Theory                 |                      |     | Practical |     |           |             |
|              |   |              |                            |     |     |                  |     |     |               | End Sem                | Mid Sem <sup>#</sup> | CP  | End Sem   | PE  | Int. Viva |             |
| 1            | Pharmaceutical Biotechnology                                  | PY5101       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 2            | Hospital Pharmacy   | PY5102       | 3                          | 0   | 0   | 3                | 0   | 0   | 3             | 40                     | 30                   | 30  | ---       | --- | ---       | 100         |
| 3            | Medicinal Chemistry – I                                       | PY5103       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 4            | Pharmacology – I*   | PY5104       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 5            | Pharmacognosy - III   | PY5105       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 6            | Collection and Preservation of Medicinal Plants <sup>##</sup> | BP-356       | ---                        | --- | --- | ---              | --- | --- | ---           | ---                    | ---                  | --- | ---       | --- | ---       | ---         |
| <b>Total</b> |   |              |                            |     |     |                  |     |     | <b>19</b>     |                        |                      |     |           |     |           | <b>900</b>  |

### REMARKS

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

\* **PY5104 Practical:** Software based experiments should be used instead of actual animal experiments wherever possible

**## PY5106:** During the semester break, the students will collect medicinal plants, prepare herbarium sheets and write monographs of plants. This will be evaluated in VIII Semester

## SEMESTER – VI

| S. No.       | Subject Name  | Subject Code | Teaching Load / Week (Hrs) |     |     | Credits Allotted |     |     | Total Credits | Maximum Marks Allotted |                      |     |           |     |           | Total Marks |
|--------------|---|--------------|----------------------------|-----|-----|------------------|-----|-----|---------------|------------------------|----------------------|-----|-----------|-----|-----------|-------------|
|              |   |              | L                          | T   | P   | L                | T   | P   |               | Theory                 |                      |     | Practical |     |           |             |
|              |   |              |                            |     |     |                  |     |     |               | End Sem                | Mid Sem <sup>#</sup> | CP  | End Sem   | PE  | Int. Viva |             |
| 1            | Pharmaceutical Jurisprudence and Intellectual Property Rights | PY6101       | 3                          | 0   | 0   | 3                | 0   | 0   | 3             | 40                     | 30                   | 30  | ---       | --- | ---       | 100         |
| 2            | Pharmaceutical Industrial Management                          | PY6102       | 3                          | 0   | 0   | 3                | 0   | 0   | 3             | 40                     | 30                   | 30  | ---       | --- | ---       | 100         |
| 3            | Medicinal Chemistry – II                                      | PY6103       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 4            | Pharmacology – II*  | PY6104       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 5            | Pharmaceutical Technology – I                                 | PY6105       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30                   | 30  | 40        | 30  | 30        | 200         |
| 6            | Industrial Training**   | PY6106       | ---                        | --- | --- | ---              | --- | --- | ---           | ---                    | ---                  | --- | ---       | --- | ---       | ---         |
| <b>Total</b> |   |              |                            |     |     |                  |     |     | <b>18</b>     |                        |                      |     |           |     |           | <b>800</b>  |

### REMARKS

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

\* **PY6104 Practical:** Software based experiments should be used instead of actual animal experiments wherever possible

**\*\*Industrial Training:** The total duration of industrial training is 2 Months / 400 Hrs. To be attended at the end of 6<sup>th</sup> and 7<sup>th</sup> Semesters, in two phases, during end-semester vacations; At the end of 8<sup>th</sup> Semester, the students have to submit a report and make a presentation, which will be evaluated by the external examiner.

## SEMESTER – VII

| S. No.       | Subject Name                          | Subject Code | Teaching Load / Week (Hrs) |     |     | Credits Allotted |     |     | Total Credits | Maximum Marks Allotted |          |     |           |     |           | Total Marks |
|--------------|---------------------------------------|--------------|----------------------------|-----|-----|------------------|-----|-----|---------------|------------------------|----------|-----|-----------|-----|-----------|-------------|
|              |                                       |              | L                          | T   | P   | L                | T   | P   |               | Theory                 |          |     | Practical |     |           |             |
|              |                                       |              |                            |     |     |                  |     |     |               | End Sem                | Mid Sem# | CP  | End Sem   | PE  | Int. Viva |             |
| 1            | Medicinal Chemistry – III             | PY7101       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 2            | Pharmacology – III*                   | PY7102       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 3            | Pharmaceutical Technology – II        | PY7103       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 4            | Biopharmaceutics and Pharmacokinetics | PY7104       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 5            | Herbal Drug Technology                | PY7105       | 3                          | 0   | 3   | 3                | 0   | 1   | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 6            | Industrial Training Evaluation**      | PY6106       | ---                        | --- | --- | ---              | --- | --- | 4             | ---                    | ---      | --- | 50        | --- | 50        | 100         |
| <b>Total</b> |                                       |              |                            |     |     |                  |     |     | <b>24</b>     |                        |          |     |           |     |           | <b>1100</b> |

### REMARKS

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

\* **PY7102 Practical:** Software based experiments should be used instead of actual animal experiments wherever possible

\*\***Industrial Training Evaluation:** Industrial training evaluation will be based on the report submitted, internal viva and presentations made by the students in the end semester examination.

## SEMESTER – VIII

| S. No.       | Subject Name                                    | Subject Code | Teaching Load / Week (Hrs) |     |     | Credits Allotted |     |   | Total Credits | Maximum Marks Allotted |          |     |           |     |           | Total Marks |
|--------------|---|--------------|----------------------------|-----|-----|------------------|-----|---|---------------|------------------------|----------|-----|-----------|-----|-----------|-------------|
|              |   |              | L                          | T   | P   | L                | T   | P |               | Theory                 |          |     | Practical |     |           |             |
|              |   |              |                            |     |     |                  |     |   |               | End Sem                | Mid Sem# | CP  | End Sem   | PE  | Int. Viva |             |
| 1            | Instrumental Methods of Analysis                | PY8101       | 3                          | 0   | 3   | 3                | 0   | 1 | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 2            | Novel Drug Delivery Systems                     | PY8102       | 3                          | 0   | 3   | 3                | 0   | 1 | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 3            | Quality Control and Quality Assurance           | PY8103       | 3                          | 0   | 3   | 3                | 0   | 1 | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 4            | Industrial Pharmacognosy                        | PY8104       | 3                          | 0   | 3   | 3                | 0   | 1 | 4             | 40                     | 30       | 30  | 40        | 30  | 30        | 200         |
| 5            | Clinical Pharmacy                               | PY8105       | 3                          | 0   | 0   | 3                | 0   | 0 | 3             | 40                     | 30       | 30  | ---       | --- | ---       | 100         |
| 6            | Collection and Preservation of Medicinal Plants | PY5106       | ---                        | --- | --- | ---              | --- | 4 | 4             | ---                    | ---      | --- | 50        | --- | 50        | 100         |
| <b>Total</b> |   |              |                            |     |     |                  |     |   | <b>23</b>     |                        |          |     |           |     |           | <b>1000</b> |

### REMARKS

# Average of two tests

CP – Class Participation; PE – Progressive Evaluation

### PROJECT BASED LEARNING / ASSIGNMENTS FOR CONTINUOUS EVALUATION

Project based learning will be evaluated after submission of project report and successful presentation of the same before duly constituted committee. Along with project based learning, assignments may also be given for continuous evaluation of the student. Such assignments may be based on Multiple Choice Questions / Quizzes / Class tests, which are evaluated and the answer sheets will be preserved along with the marks list.