

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY
(Formerly West Bengal University of Technology)
B.PHARM Syllabus
(Effective from 2017-2018 Admission Session)

Curriculum Structure
Semester I

| Course Code | Name of the course | No. of hours | Tutorial | Full Marks | Credit points |
|-------------------|---|--------------|----------|------------|---------------|
| THEORY | | | | | |
| PT105 | Human Anatomy and Physiology I – Theory | 3 | 1 | 100 | 4 |
| PT101 | Pharmaceutical Analysis I – Theory | 3 | 1 | 100 | 4 |
| PT106 | Pharmaceutics I – Theory | 3 | 1 | 100 | 4 |
| PT103 | Pharmaceutical Inorganic Chemistry – Theory | 3 | 1 | 100 | 4 |
| PRACTICAL | | | | | |
| PT195 | Human Anatomy and Physiology – Practical | 4 | - | 100 | 2 |
| PT191 | Pharmaceutical Analysis I – Practical | 4 | - | 100 | 2 |
| PT196 | Pharmaceutics I – Practical | 4 | - | 100 | 2 |
| PT193 | Pharmaceutical Inorganic Chemistry – Practical | 4 | - | 100 | 2 |
| SESSIONAL* | | | | | |
| HU181 | Communication skills – Theory | 2 | - | 100 | 2 |
| PTB184/ M183 | Remedial Biology/ Remedial Mathematics – Theory | 2 | - | 100 | 2 |
| HU182 | Communication skills – Practical | 2 | - | 100 | 1 |
| PTB185 | Remedial Biology – Practical | 2 | - | 100 | 1 |
| Total | | 36 | 4 | | 30 |

The students who have studied Mathematics / Physics / Chemistry at HSC will be appearing for Remedial Biology course.

The students who have studied Physics / Chemistry / Biology (Botany / Zoology) at HSC will be appearing for Remedial Mathematics course. * Non University Examination (NUE)

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Semester II

| Table-II: Course of study for semester II Course Code | Name of the course | No. of hours | Tutorial | Full Marks | Credit points |
|--|---|---------------------|-----------------|-------------------|----------------------|
| THEORY | | | | | |
| PT215 | Human Anatomy and Physiology II – Theory | 3 | 1 | 100 | 4 |
| PT213 | Pharmaceutica l Organic Chemistry I – Theory | 3 | 1 | 100 | 4 |
| PT214 | Biochemistry – Theory | 3 | 1 | 100 | 4 |
| PT216 | Pathophysiolo gy – Theory | 3 | 1 | 100 | 4 |
| PRACTICAL | | | | | |
| PT298 | Human Anatomy and Physiology II –Practical | 4 | - | 100 | 2 |
| PT296 | Pharmaceutica l Organic Chemistry I– Practical | 4 | - | 100 | 2 |
| PT297 | Biochemistry – Practical | 4 | - | 100 | 2 |
| SESSIONAL* | | | | | |
| HU282 | Environmenta l sciences – Theory | 3 | - | 100 | 3 |
| PTC 203 | Computer Applications In Pharmacy Theory | 3 | | 100 | 3 |
| PTC 293 | Computer Applications In Pharmacy Practical | 4 | | 100 | 2 |
| Total | | 34 | 4 | | 30 |

*Non university examination

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Semester III

| Course code | Name of the course | No. of Hours/ week | Tutorial/ week | Credit points |
|--------------------|---|---------------------------|-----------------------|----------------------|
| PT 314 | Pharmaceutical Organic Chemistry II – Theory | 3 | 1 | 4 |
| PT 316 | Physical Pharmaceutics I – Theory | 3 | 1 | 4 |
| PT 319 | Pharmaceutical Microbiology – Theory | 3 | 1 | 4 |
| PT 317 | Pharmaceutical Engineering – Theory | 3 | 1 | 4 |
| PT 394 | Pharmaceutical Organic Chemistry II – Practical | 4 | - | 2 |
| PT 396 | Physical Pharmaceutics I – Practical | 4 | - | 2 |
| PT 399 | Pharmaceutical Microbiology – Practical | 4 | - | 2 |
| PT 397 | Pharmaceutical Engineering – Practical | 4 | - | 2 |
| Total | | 28 | 4 | 24 |

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Semester IV

| Course code | Name of the course | No. of hours | Tutorial | Credit points |
|--------------|--|--------------|----------|---------------|
| PT 414 | Pharmaceutical Organic Chemistry III– Theory | 3 | 1 | 4 |
| PT413 | Industrial Pharmacy I – Theory | 3 | 1 | 4 |
| PT416 | Physical Pharmaceutics II – Theory | 3 | 1 | 4 |
| PT418 | Pharmacology I – Theory | 3 | 1 | 4 |
| PT412 | Pharmacognosy and Phytochemistry I– Theory | 3 | 1 | 4 |
| PT493 | Industrial Pharmacy I – Practical | 4 | - | 2 |
| PT496 | Physical Pharmaceutics II – Practical | 4 | | 2 |
| PT498 | Pharmacology I – Practical | 4 | - | 2 |
| PT492 | Pharmacognosy and Phytochemistry I – Practical | 4 | - | 2 |
| Total | | 31 | 5 | 28 |

Semester V

| Course code | Name of the course | No. of hours | Tutorial | Credit points |
|------------------|---|--------------|----------|---------------|
| THEORY | | | | |
| PT513A | Medicinal Chemistry I – Theory | 3 | 1 | 4 |
| PT513B | Medicinal Chemistry II – Theory | 3 | 1 | 4 |
| PT518 | Pharmacology II – Theory | 3 | 1 | 4 |
| PT512 | Pharmacognosy and Phytochemistry II– Theory | 3 | 1 | 4 |
| PT516 | Pharmaceutical Jurisprudence – Theory | 3 | 1 | 4 |
| PRACTICAL | | | | |
| PT593 | Medicinal Chemistry I – Practical | 4 | - | 2 |
| PT598 | Pharmacology II – Practical | 4 | - | 2 |
| PT 592 | Pharmacognosy and Phytochemistry II – Practical | 4 | - | 2 |
| Total | | 27 | 5 | 26 |

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Semester VI

| Course code | Name of the course | No. of hours | Tutorial | Credit points |
|------------------|--|--------------|----------|---------------|
| THEORY | | | | |
| PT 613 | Medicinal Chemistry III – Theory | 3 | 1 | 4 |
| PT618 | Pharmacology III – Theory | 3 | 1 | 4 |
| PT612 | Herbal Drug Technology – Theory | 3 | 1 | 4 |
| PT 616 | Biopharmaceutics and Pharmacokinetics – Theory | 3 | 1 | 4 |
| PT-619 | Pharmaceutical Biotechnology – Theory | 3 | 1 | 4 |
| PT 611 | Quality Assurance – Theory | 3 | 1 | 4 |
| PRACTICAL | | | | |
| PT693 | Medicinal chemistry III – Practical | 4 | - | 2 |
| PT698 | Pharmacology III – Practical | 4 | - | 2 |
| PT692 | Herbal Drug Technology – Practical | 4 | - | 2 |
| Total | | 30 | 6 | 30 |

Semester VII

| Course code | Name of the course | No. of hours | Tutorial | Credit points |
|------------------|--|--------------|----------|---------------|
| THEORY | | | | |
| PT711 | Instrumental Methods of Analysis – Theory | 3 | 1 | 4 |
| PT716A | Industrial Pharmacy II – Theory | 3 | 1 | 4 |
| PT718 | Pharmacy Practice – Theory | 3 | 1 | 4 |
| PT716B | Novel Drug Delivery System – Theory | 3 | 1 | 4 |
| PRACTICAL | | | | |
| PT791 | Instrumental Methods of Analysis – Practical | 4 | - | 2 |
| SESSIONAL | | | | |
| PT- 781 | Practice School* | 12 | - | 6 |
| Total | | 28 | 4 | 24 |

* Non University Examination (NUE)

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Semester VIII

| Course code | Name of the course | No. of hours | Tutorial | Credit points |
|------------------|--|--------------|--------------|---------------|
| THEORY | | | | |
| PT 817 | Biostatistics and Research Methodology | 3 | 1 | 4 |
| PT818 | Social and Preventive Pharmacy | 3 | 1 | 4 |
| PT810A | Pharma Marketing Management(Elective)* | 3×2=6 | 1×2=2 | 4×2=8 |
| PT810B | Computer Aided Drug Design(Elective)* | | | |
| PT810C | Advanced Instrumentation Techniques(Elective)* | | | |
| SESSIONAL | | | | |
| PT 883 | Project Work | 12 | - | 6 |
| Total | | 24 | 4 | 22 |

- * A student has to opt any two(2) electives

Table-IX: Semester wise credits distribution

| Semester | Credit Points |
|--|---------------|
| I | 30 |
| II | 30 |
| III | 24 |
| IV | 28 |
| V | 26 |
| VI | 30 |
| VII | 24 |
| VIII | 22 |
| Extracurricular/ Co curricular activities | 01* |
| Total credit points for the program | 215 |

* 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.

Note: For Lateral Entry Students

Two subjects namely - Communication Skills (Theory & Practical) and Computer applications in Pharmacy (Theory & Practical) which are already in the syllabus of 1st year students as non-University examination (NUE Sessional) need to be added as proposed in PCI regulation and syllabus, as stated below.

- I. Computer Application in Pharmacy (Theory & Practical) in 7th semester.
- II. Communication Skills (Theory & Practical) in 8th Semester.

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NOTES:

1. Academic (Program) Committee

The B. Pharm. program shall have an Academic (Program) Committee constituted by the Head of the institution.

2. 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 be decided by the supervisor in consultation with the student. The project may be carried out in group not exceeding 3 in number.

The internal and external examiner appointed by the University shall evaluate the project at the time of the Practical examinations of other semester(s).

3. 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.

4. 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 academic (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. The 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.