

MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY
(Formerly West Bengal University of Technology)
B.PHARM Syllabus
(Effective from 2021-2022 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*					
PTB184 & PTB185 OR PTM183	Remedial Biology – Theory & Remedial Biology – Practical OR Remedial Mathematics – Theory	2 + 2 2	-	50 + 50 100	2 + 1 3
Total		36	4		27

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

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
Total		34	4		25

*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
Sessional				
PT381	Computer Applications In Pharmacy Theory	3		3
PT382	Computer Applications In Pharmacy Practical	4		2
Practical				
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		35	4	29




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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	Medicinal Chemistry 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
Sessional				
HU 481	Communication skills – Theory	2		2
HU 482	Communication skills – Practical	2		1
Practical				
PT493	Medicinal Chemistry 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		35	5	31

Semester V

Course code	Name of the course	No. of hours	Tutorial	Credit points
THEORY				
PT513B	Medicinal Chemistry II – Theory	3	1	4
PT515	Industrial Pharmacy I – 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				
PT595	Industrial Pharmacy 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)*			
PT810D	Life Science Skill Development *			
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	27
II	25
III	29
IV	31
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.
- * This (Extracurricular/ Co curricular activities) credit point will be awarded to the student who will qualify the MAR(Mandatory Additional Requirement).
- * To obtain B.Pharm degree with honours minimum of additional 8 credits has to be earned in minimum three subjects from MOOCs Platform as recognized by MAKAUT, WB.

Note: For Lateral Entry Students

- * Lateral Entry students will carry 52credits from D.Pharm as per norms of PCI.




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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.




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M. PHARM SYLLABUS

PHARMACEUTICS

Course Code	Course	Credit Hours	Credit Points	Hrs/w k	Marks
SEMESTER I					
MPT1061	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPT1062	Drug Delivery System	4	4	4	100
MPT 1063	Modern Pharmaceutics	4	4	4	100
MPT 1064	Regulatory Affair	4	4	4	100
MPT 1965	Pharmaceutics Practical I	12	6	12	200
MPT 1986	Seminar/Assignment	7	4	7	100
Total		35	26	35	700
SEMESTER II					
MPT 2061	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	4	4	4	100
MPT2062	Advanced Biopharmaceutics & Pharmacokinetics	4	4	4	100
MPT 2063	Computer Aided Drug Delivery System	4	4	4	100
MPT 2064	Cosmetic and Cosmeceuticals	4	4	4	100
MPT 2065	Pharmaceutics Practical II	12	6	12	200
MPT 2986	Seminar/Assignment	7	4	7	100
Total		35	26	35	700




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PHARMACOLOGY

Course Code	Course	Credit Hours	Credit Points	Hrs/wk	Marks
Semester I					
MPT 1081	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPT 1082	Advanced Pharmacology-I	4	4	4	100
MPT 1083	Pharmacological and Toxicological Screening Methods-I	4	4	4	100
MPT 1084	Cellular and Molecular Pharmacology	4	4	4	100
MPT 1985	Pharmacology Practical I	12	6	12	200
MPT 1986	Seminar/Assignment	7	4	7	100
	Total	35	26	35	700
Semester II					
MPT 2081	Advanced Pharmacology II	4	4	4	100
MPT 1082	Pharmacological and Toxicological Screening Methods-II	4	4	4	100
MPT 2083	Principles of Drug Discovery	4	4	4	100
MPT 2084	Experimental Pharmacology practical- II	4	4	4	100
MPT 2985	Pharmacology Practical II	12	6	12	200
MPT 2986	Seminar/Assignment	7	4	7	100
	Total	35	26	35	700





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MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL
 Syllabus of M. PHARM Industrial Pharmacy
 Effective from academic session 21-22

Curriculum structure

Course Code	Course	Credit Hours	Credit Points	Hrs./w k	Marks
SEMESTER I					
MIP101	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MIP 102	Pharmaceutical Formulation Development	4	4	4	100
MIP 103	Novel drug delivery systems	4	4	4	100
MIP 104	Intellectual Property Rights	4	4	4	100
MIP191	Industrial Pharmacy Practical I	12	6	12	150
MIP 181	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
SEMESTER II					
MIP201	Advanced Biopharmaceutics and Pharmacokinetics	4	4	4	100
MIP202	Scale up and Technology Transfer	4	4	4	100
MIP203	Pharmaceutical Production Technology	4	4	4	100
MIP204	Entrepreneurship Management	4	4	4	100
MIP291	Industrial Pharmacy Practical II	12	6	12	150
MIP 281	Seminar/Assignment	7	4	7	100
Total		35	26	35	650




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M. PHARM SYLLABUS

PHARMACEUTICAL ANALYSIS

Course of study for M. Pharm. (Pharmaceutical Analysis)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
Semester I					
MPT1011	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPT1012	Advanced Pharmaceutical Analysis	4	4	4	100
MPT1013	Pharmaceutical Validation	4	4	4	100
MPT1014	Food Analysis	4	4	4	100
MPT1915	Pharmaceutical Analysis Practical - I	12	6	12	200
MPT1916	Seminar/Assignment	7	4	7	100
	Total	35	26	35	700
Semester II					
MPT2011	Advanced Instrumental Analysis	4	4	4	100
MPT2012	Modern Bio-Analytical Techniques	4	4	4	100
MPT2013	Quality Control and Quality Assurance	4	4	4	100
MPT2014	Herbal and Cosmetic Analysis	4	4	4	100
MPT2915	Pharmaceutical Analysis Practical - II	12	6	12	200
MPT2916	Seminar/Assignment	7	4	7	100
	Total	35	26	35	700




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(valid from 2018-2019)

Course of study for M. Pharm. III Semester
Common for all specialisations

Sr.No.	Course Code	Course	Contact Hours			Credit Points
			L	Project	Full Marks	
3	MPT-391	Discussion / Presentation (Proposal)		2	100	2
4	MPT-392	Research Work		28	100	14
SESSIONAL*						
1.	MPT-384	Research Methodology and Biostatistics*	4		100	4
2	MPT-381	Journal club		1	100	1
	Total		4	31		21

*Non University Exam




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Syllabus of M. Pharm. IV Semester


(Effective for 2018-2019 Admission Session)

Course of study for M. Pharm. IV Semester

(Common for All Specializations)

Sr. No.	Course Code	Course Name	Contact Hours			Full Marks	Credit points
			L	T	P		
1	MPT-491	Discussion/Final Presentation			3	100	3
2	MPT-492	Research Work			31	100	16
Sessional							
3	MPT-481	Journal Club			1	100	1
4	MPT-482	Co-curricular Activities					3
		Participation in National Level seminar/Conference/Workshop/Symposium/Training Programs (related to the specialization of the student).					
		Participation in International Level seminar/Conference/Workshop/Symposium/Training Programs (related to the specialization of the student).					
		Academic Award/research Award from State Level/National Agencies.					
		Academic Award/research Award from International Agencies.					
		Research/Review Publication in National Journals (Indexed in Scopus/Web of Science).					
		Research/Review Publication in International Journals (Indexed in Scopus/Web of Science).					
Total					35		23




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Syllabus of M. Pharm. IV Semester

(Effective for 2018-2019 Admission Session)

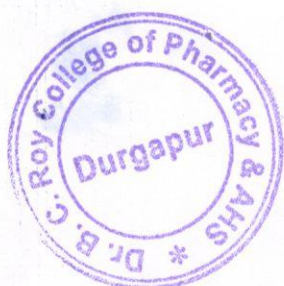
SEMESTER	Credit Points
I	26
II	26
III	21
IV	23
Total	96


**Guidelines for Awarding Credit Points for Co-curricular Activities
(One 1 Credit & One 2 Credit Course to be chosen)**

Name of the Activity	Maximum Credit Points
	Eligible / Activity
Participation in National Level Seminar / Conference/ Workshop/ Symposium/ Training Programs (related to the specialization of the student)	01
Participation in international Level Seminar/Conference/Workshop/Symposium/ Training Programs (related to the specialization of the student)	02
Academic Award/Research Award from State Level/National Agencies	01
Academic Award/Research Award from International Agencies	02
Research / Review Publication in National Journals (Indexed in Scopus / Web of Science)	01
Research / Review Publication in International Journals (Indexed in Scopus / Web of Science)	02

Note: International Conference: Held Outside India

International Journal: The Editorial Board outside India




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