

Department of Pharmaceutical Engineering and Technology

B.Tech. Course Structure (without Minor or Second Major 2025-26 onwards)

Category	B.Tech. with Internship Program Components	Proposed	Recommended	
			Minimum	Maximum
HLM	Humanities, Social Science, Language and Management	11	10	--
IS	Institute Science	25	22	--
IE	Institute Engineering	17	15	--
EP	Engineering Drawing (Manual and Computer Aided), Manufacturing Practices, and Practice courses of Department/ School	9	8	--
°DC+DE	Department/Program Core +Elective	67.5	68	--
OE	Open Electives	6	6	--
Indl/RI/SUE	Industrial/research internship/Start-up or Entrepreneurship	15	15	--
DP	Exploratory project	3	3	3
°Total		153.5	°147	°165
*SP	*Stream Projects for B.Tech. Honors	10	10	10
		163.5	°157	°175
°DC+DE: The Department or Program Core (DC) should typically be between 50 to 70% of the total DC+DE credits				
° Shows the minimum and the maximum credit limits for a B.Tech. degree.				

B.Tech. Course Structure for Pharmaceutical Engineering and Technology (2025-2026 onwards) without minor or Second Major

UG-CRC Code	Course Code	Course Name	L-T-P			Credits
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-I						
IH1.H101.25	HLM 101	Universal Human Values	2	0	0	2
GY1.PE101.25	PE101	Elementary Physical Education	0	1	3	2.5
GY2.CP101.25	CP101	Creative Practices #	0	1	3	2.5
		Total	2	2	6	7
LM.HL102.25	HLM 102	English*	2	0	0	2
		Total	4	2	6	9
#Creative Practices course to be announced by Dean Academic Office						
*Basic English course to be taken by student as recommended after Diagnostic Test						
Note: 1. Per semester load should not exceed 22 credits. 2. It is recommended that departments should limit the max total credits towards 161. Otherwise, the students may have extra load and avoid taking minor courses.						
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-I						
IS1.PH101.25	PH101	Biology	3	1	0	4
IS2.CY101.25	CY101	Chemistry – I	2	1	2	4
IS3.PHY102.25	PHY102	Introduction to Engineering Electromagnetics	3	1	2	5
IE1.CMO103.25	ME103	Engineering Thermodynamics	3	1	0	4
IS4.PH103.25	PH103	Essentials of Biochemistry	3	0	2	4
EP1.ME105.25	ME105	Manufacturing Practice – I	0	0	3	1.5
		Total	14	4	9	22.5
L: Lecture Hours, T: Tutorials Hours, P: Practical Or Laboratory Hours, C: Credits						

UG-CRC Code	Course Code	Course Name	L-T-P			Credits
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-II						
EP2.ME104.25	ME104	Engineering Drawing	1	0	3	2.5
IS6.MA202.25	MA202	Probability and Statistics	3	1	0	4
EP4/PP.PH102.25	PH102	Basics of Pharmaceutical Sciences	2	0	3	3.5
IE2.CSO101.25	CSO101	Computer Programming	3	1	2	5
EP3.ME106.25	ME106	Manufacturing Practice – II	0	0	3	1.5
IH2.H.25	HLM	HLM	3	0	0	3
Total			12	2	11	19.5
# The students have to choose one course from H103 & H104.						
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-III						
IE3.MO201.25	MO201	Materials Science	3	1	0	4
DC1.PH202.25	PH202	Human Physiology	3	0	0	3
IS5.MA101.25	MA101	Engineering Mathematics – I	3	1	0	4
DC2.PH211.25	PH211	Physical Pharmaceutics	2	0	3	3.5
DC3.PH221.25	PH221	Pharmaceutical Chemistry	2	0	3	3.5
IH3.H.25	HLM	HLM	3	0	0	3
Total			16	2	6	21
# Students have to choose one course from H105 and H106 and will study in III semester.						
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-IV						
IE4.CHO208.25	CHO208	Heat and Mass Transfer	3	1	0	4
DC5.PH231.25	PH231	General Pharmacology	3	0	2	4
DC6.PH241.25	PH241	General Pharmacognosy	3	0	2	4
DC7.PH251.25	PH251	Pharmaceutical Analysis	2	0	2	3
DC8.BOPH201.25	PH201	Microbiology and Biotechnology	2	0	2	3
DP.PH291.25	PH291	Exploratory Project	0	0	6	3
Total			13	1	14	21
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-V						
DC4.PH320.25	PH320	Bioorganic and Medicinal Chemistry	2	0	2	3
DC10.PH311.25	PH311	Pharmaceutical Technology	2	0	2	3
DC11.PH331.25	PH331	General Pharmacotherapeutics	2	0	0	2
DC9.PH301.25	PH301	Pharmaceutical Jurisprudence	2	0	0	2
DE-1	DE-1	Department Elective - 1	3	0	0	3
DE-2	DE-2	Department Elective - 2	3	0	0	3
Total			14	0	4	16
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-VI						
Indl/RI/SUE	PH391	Industrial/research internship/Start-up or Entrepreneurship	0	0	30	15
NPTEL/SWAYAM		To be selected from NPTEL/Swayam	2	0	0	2
Total credits in the semester			2	0	30	17
Pharm Engg & Technology: 4-Year B.Tech. VII-Semester						
DC14.PH451.25	PH451	Pharmaceutical Instrumental Analysis	2	1	2	4
DC12.PH440.25	PH440	Natural Drugs and Excipients	2	1	1	3.5
DE-3	DE-3	Department Elective (DE) - 3	3	0	0	3
DE-4	DE-4	Department Elective (DE) - 4	3	0	0	3
IH4.H.25	HLM	HLM	3	0	0	3
OE-1	OE-1	Open Elective - 1	3	0	0	3
Total credits in the semester			16	2	3	19.5
DP.PH491.25	PH491	Stream Project 1 (Hons.)	0	0	10	5
Total credits in the semester			15	2	13	24.5

UG-CRC Code	Course Code	Course Name	L-T-P			Credits
Pharmaceutical Engineering and Technology: 4-Year B.Tech. Semester-VIII						
DC15.PH412.25	PH412	Dosage Formulation Design	3	0	2	4
DC16.PH413.25	PH413	Nanotechnology in Drug Delivery	3	1	0	4
DE-5	DE-5	Department Elective (DE) - 5	3	0	0	3
DE-6	DE-6	Department Elective (DE) - 6	3	0	0	3
OE-2	OE-2	Open Elective - 2	3	0	0	3
Total credits in the semester			15	1	2	17
DP.PH492.25	PH492	Stream Project 2 (Hons.)	0	0	10	5
Total Credits in the Semester (Hons.)			15	1	12	22

		B.Tech. Pharm Engg (Regular): Total Credits				153.5
		B.Tech. Pharm Engg (Hons.): Total Credits				163.5
		Course Code Change				
	Old		New			
	BL 101	Biology	PH101			
	BO 301	Microbiology and Biotechnology	PH201			
	PH222	Bioorganic and Medicinal chemistry	PH 320			
	PH 341	Natural Drugs and Excipients	PH440			
	PH 333	Drug Discovery Technology	PH 401			
	PH101	Basics of Pharmaceutical Sciences	PH102			

List of Electives DE-1						
UG-CRC Code	Course Code	Course Name	L-T-P			Credits
DE.PH321.25	PH321	Chemistry of Synthetic Drugs	3	0	0	3
DE.PH342.25	PH342	Traditional Drugs and Phytotherapy	3	0	0	3
List of Electives DE-2						
DE.PH312.25	PH312	Hospital and Clinical Pharmacy	3	0	0	3
DC13.PH401.25	PH401	Drug Discovery Technology	3	0	0	3
List of Electives DE-3						
UG-CRC Code	Course Code	Course Name	L-T-P			Credits
DE.PH411.25	PH411	Biopharmaceutics	3	0	0	3
DE.PH441.25	PH441	Herbal Drug Technology	3	0	0	3
List of Electives DE-4						
UG-CRC Code	Course Code	Course Name	L-T-P			Credit
DE.PH521.25	PH521	Advanced Medicinal Chemistry	3	0	0	3
DE.PH534.25	PH534	Applied Pharmacology	3	0	0	3
VIII Semester Elective / Stream DE - 5						
UG-CRC Code	Course Code	Course Name	L-T-P			Credit
DE.PH515.25	PH515	Industrial Pharmacy	3	0	0	3
DE.PH443.25	PH443	Nutraceuticals and Herbal Cosmetics	3	0	0	3
VIII Semester Elective / Stream DE - 6						
UG-CRC Code	Course Code	Course Name	L-T-P			Credit
DE.PH525.25	PH525	Computational Drug Design	3	0	0	3
DE.PH536.25	PH536	Toxicology	3	0	0	3

L: Lecture hours; T: Tutorial hours; P: Laboratory/ Practical hours; C: Credits