

# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Human Anatomy and Phy	man Anatomy and Physiology I											
Course Code	BP-101[T]												
Course Outcomes & Bloom's Level	human body(BL1-Remem CO2- Describe the various Understand) CO3- Identify the various t Evaluate) CO4- Perform the various system(BL3-Apply)	ber) s homeostatic massues and organic experiments relatives	eture and functions of various organs of the nechanisms and their imbalances.(BL2-ans of different systems of human body(BL5-lated to special senses and nervous lymphatic system and immunity in human										
Course Elements	Skill Development ✓ Entrepreneurship X Employability X SDG1(No poverty) SDG3(Good health and well-being)												

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	2	-	1	-	-	2	-	3	1	3	1	3
CO2	2	1	-	1	-	1	-	-	1	-	2	1	2	1	2
CO3	3	2	-	-	-	1	-	-	2	-	1	1	2	1	2
CO4	3	2	-	1	1	2	-	-	-	-	-	-	1	2	1
CO5	2	1	-	-	1	-	1	-	-	-	-	-	1	2	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Analysis I	armaceutical Analysis I										
Course Code	BP-102[T]											
Course Outcomes & Bloom's Level	Understand) CO2- To gain knowledge of Remember) CO3- To analyze the techni Apply) CO4- To explain about accu Remember) CO5- To compute analytica	sources of erro ques of volume uracy, precision I results and un	tric and electro chemical analysis(BL2- ors and minimizing techniques.(BL1- etric, gravimetric and gas analysis.(BL3- and significant figure error concepts.(BL1- ederstand the physiochemical concepts of chiometry etc(BL4-Analyze)									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	, ,	SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	P08	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	-	3	3	-	-	1	1	-	3	1	3	2	1
CO2	2	2	-	2	2	-	-	1	2	-	3	2	2	1	2
CO3	2	2	1	-	1	-	-	2	1	-	2	1	1	1	1
CO4	2	1	3	-	1	-	-	2	1	-	2	1	1	-	1
CO5	3	3	2	-	1	1	-	-	-	-	-	-	1	1	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutics I		
Course Code	BP-103[T]		
Course Outcomes & Bloom's Level	and pharmaceutical calcula CO3- Understand the profeCO4- Preparation of solid a	es of different de ations(BL2-Und essional way of and liquid dosag	osage forms, pharmaceutical incompatibilities lerstand) handling the prescription(BL2-Understand)
	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	-	3	2	1	-	-	-	3	2	3	2	2
CO2	3	2	3	-	-	-	-	-	-	-	-	-	3	2	1
CO3	2	2	2	-	-	1	1	2	-	3	3	-	3	1	1
CO4	2	1	1	-	-	-	-	-	-	-	2	1	3	3	-
CO5	2	1	-	1	-	1	-	1	-	-	2	-	1	1	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Inorganic	Chemistry	
Course Code	BP-104[T]		
Course Outcomes & Bloom's Level	Understand) CO2- To know the sources inorganic pharmaceuticals. CO3- To gain knowledge or compounds.(BL1-Rememble CO4- To understand the me Understand)	of impurities ar (BL1-Rememb In limit tests of do Der) ethod to prepar al importance of	different pharmaceutical inorganic re inorganic pharmaceuticals(BL2- re facidifiers, antacids, cathartics and
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)	

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	P08	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	2	1	2	1	3	-	3	-	3	3	-
CO2	3	2	1	2	2	1	1	1	2	-	3	-	2	3	1
CO3	2	2	1	1	2	2	1	1	2	-	3	1	1	2	-
CO4	2	2	1	1	2	1	1	1	1	-	2	-	1	1	-
CO5	3	1	2	1	3	1	2	1	1	-	2	3	1	2	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Communication Skills *	nmunication Skills *										
Course Code	BP-105[T]											
Course Outcomes & Bloom's Level	areas of pharmaceutical op CO2- Communicate effective	eration.(BL2-Uvely (Verbal and ne team as a te skills(BL3-App	d Non-Verbal)(BL3-Apply) am player(BL2-Understand) ly)									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X		SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	3	-	1	-	-	3	3	-	1	3
CO2	-	-	-	-	-	2	1	1	-	-	2	2	-	1	3
CO3	-	1	-	-	-	1	-	1	-	-	2	2	-	1	3
CO4	-	-	-	1	-	2	1	1	-	-	2	3	-	1	3
CO5	-	-	-	-	-	-	1	1	-	-	1	2	_	1	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Remedial Biology *	emedial Biology *										
Course Code	BP-106RB[T]											
	kingdoms(BL1-Remember) CO2- Understand the basic of Understand) CO3- To determine role of holody and process of oogenes CO4- To elaborate the physic plant/animal tissues(BL3-Ap	components of a formones in regula sis and spermate plogy, nutrient re ply)	organisms and classification of natomy & physiology of plant(BL2-ation of various organs functioning in the ogenesis(BL2-Understand) quirements for plants and to predict spinal cord, and role of kidney in regulation									
Course Elements	Skill Development X Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	P08	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	1	1	1	1	-	1	-	3	-	3	-	2
CO2	3	1	-	2	-	-	-	-	1	-	3	-	2	-	2
CO3	2	2	-	1	-	1	-	-	-	-	2	-	2	-	2
CO4	2	2	-	1	-	-	-	-	1	-	2	-	1	-	1
CO5	3	1	-	1	-	-	-	-	1	-	2	-	3	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Remedial Mathematics *											
Course Code	BP-106RM[T]											
Course Outcomes & Bloom's Level	CO2- Solve the different typ CO3- Appreciate the imports CO4- To adopt both conven- mathematical problems.(BL CO5- Apply a range of tech	To understand the role of mathematics in pharmacy(BL1-Remember) Solve the different types of problems by applying theory(BL2-Understand) Appreciate the important application of mathematics in Pharmacy(BL4-Analyze) To adopt both conventional and creative techniques to the solutions of matical problems.(BL4-Analyze) Apply a range of techniques effectively to solve problems including theory tion, approximation and simulation(BL3-Apply)										
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	2	1	1	1	-	-	-	-	-	2	-	-	1	1
CO2	-	3	1	-	1	-	-	-	-	-	1	-	-	1	-
CO3	-	2	1	-	1	-	-	-	-	-	1	-	-	1	1
CO4	1	2	1	1	1	-	-	-	-	-	1	-	-	-	1
CO5	-	2	-	-	2	-	-	-	-	-	2	-	-	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fine art and Music-I *	ne art and Music-I *											
Course Code	BP-113[T]	·113[T]											
	presentation in free hand dra proportion, volume and visua	I- Drawing exercises are to learn accurate observation and skills of graphic sentation in free hand drawing exercises from objects and nature to study portion, volume and visual perspective, suggestion of solidity by line, mass, value texture; emphasis on variety of visual experiences(BL3-Apply)											
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	1	-	-	-	-	-	-	-	2	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	_	-	_	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Human anatomy and Phys	uman anatomy and Physiology											
Course Code	BP-107[P]												
Course Outcomes & Bloom's Level	tissues.(BL1-Remember) CO2- To summarize the ch Understand) CO3- To identify the bleedil CO4- To analyze the blood CO5- To estimate the ESR	aracteristics of ng/clotting time cells using hea , HR, PR, hemo	different bones (skeletal system)(BL2- and blood group(BL2-Understand) mocytometry(BL4-Analyze) globin concentration of human blood and										
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X  SDG (Goals) SDG4(Quality education) SDG8(Decent work and economic growt											

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	1	2	-	-	-	-	-	3	-	3	-	2
CO2	3	-	-	-	1	-	-	1	-	-	3	-	2	1	3
CO3	3	1	-	1	1	-	-	-	-	-	3	-	3	-	2
CO4	1	-	-	-	2	-	-	1	-	-	3	-	1	-	1
CO5	1	1	-	-	1	1	-	-	-	-	3	-	2	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Analysis I	armaceutical Analysis I											
Course Code	BP-108[P]												
Course Outcomes & Bloom's Level	CO3- To experiment with volu oxidation and reduction react aqueous titration(BL4-Analyz CO4- To analyze gravimetric	rette.(BL2-Understand)  2- To demonstrate standardization of solutions with different strengths(BL3-Apply)  3- To experiment with volumetric analysis such as acidimetry and alkalimetry, dation and reduction reactions, iodometry, complexometry, precipitation and non-ueous titration(BL4-Analyze)  4- To analyze gravimetric analytical techniques(BL4-Analyze)  5- To evaluate pharmaceuticals by colorimetry and electrochemical methods(BL5-											
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	1	1	-	-	-	-	-	3	-	3	-	2
CO2	3	2	1	-	1	-	-	-	-	-	3	-	3	-	1
CO3	2	3	3	2	-	-	-	-	-	-	2	-	2	-	1
CO4	2	2	2	-	1	-	-	-	-	-	2	-	1	1	1
CO5	2	3	1	1	-	-	-	-	-	-	3	-	1	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutics I	harmaceutics I											
Course Code	BP-109[P]	-109[P]											
Course Outcomes & Bloom's Level	dosage forms(BL1-Remem CO2- Understand the profe CO3- To experiment with so external administration.(BL CO4- To formulate Biphasio	nber) ssional way of holid and monoph 3-Apply) c liquid dosage f	reparation of solid, liquid and semi solid  randling the prescription(BL2-Understand)  rasic liquid dosage forms for internal and  form and their evaluation(BL5-Evaluate)  and their evaluation(BL3-Apply)										
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	1	2	-	-	-	1	2	3	1	3	-	3
CO2	3	2	3	2	-	-	-	-	-	1	3	3	2	-	2
CO3	2	2	3	-	1	-	-	-	1	1	3	2	3	-	2
CO4	3	1	3	3	1	-	-	-	-	-	2	-	3	-	2
CO5	2	1	3	2	1	1	-	-	2	2	1	1	-	-	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Inorganic	Chemistry										
Course Code	BP-110[P]											
Course Outcomes & Bloom's Level	compounds(BL2-Understa CO3- To demonstrate the p CO4- To analyze various in test(BL4-Analyze)	2- Understand the medicinal and pharmaceutical importance of inorganic apounds (BL2-Understand) 3- To demonstrate the preparation of inorganic pharmaceuticals. (BL3-Apply) 4- To analyze various inorganic pharmaceutical compounds and perform limit (BL4-Analyze) 5- To select suitable method for the preparation of inorganic pharmaceuticals (BL4-										
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment ✓	SDG (Goals)	SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	2	1	-	-	-	2	2	2	-	2	-	3
CO2	2	1	1	3	2	-	-	-	1	1	3	-	2	-	1
CO3	3	2	1	1	2	-	-	-	-	-	3	-	3	1	2
CO4	3	2	1	3	2	-	-	-	1	-	2	-	1	1	1
CO5	3	3	-	1	1	-	-	-	-	1	2	-	3	-	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Communication Skills	ommunication Skills											
Course Code	BP-111[P]												
Course Outcomes & Bloom's Level	CO2- To apply the practical sk (BL3-Apply) CO3- To take part in advance (BL4-Analyze) CO4- To develop the interview	s of pharmaceutical operation(BL2-Understand) - To apply the practical skills to Communicate effectively (Verbal and Non-Verbal) - Apply) - To take part in advanced learning on comprehension/direct and indirect speech.											
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	3	-	-	1	3	3	1	3	1	1
CO2	-	-	-	-	-	2	-	1	-	3	2	1	2	1	1
CO3	-	-	-	-	-	2	-	1	1	2	2	3	2	2	1
CO4	-	-	-	-	-	1	-	-	1	2	2	2	2	2	1
CO5	-	-	-	-	-	1	-	-	1	1	2	1	2	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	_	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Remedial Biology		
Course Code	BP-112BP[P]		
Course Outcomes & Bloom's Level	CO3- To identify various plant Remember) CO4- To assessthe microscop root, leaf, seed, fruit and flower	ture of cell and it parts, and to org pical study and id er.(BL1-Rememb	s inclusions.(BL2-Understand) ganize their modifications(BL1- entification of tissues pertinent to stem,
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	1	1	-	-	-	3	-	2	-	2
CO2	2	-	1	-	-	-	-	-	-	-	2	-	2	-	2
CO3	2	2	-	-	-	1	-	-	-	-	2	-	1	-	1
CO4	2	2	-	-	-	1	1	-	-	-	2	-	1	-	1
CO5	2	3	1	-	-	-	-	-	-	-	2	-	1	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	_



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Remedial Biology *	emedial Biology *											
Course Code	BP-112RB[P]												
& Bloom's Level	techniques(BL2-Understate CO2- To understand the street CO3- To identify various planemember) CO4- To assessthe microsoroot, leaf, seed, fruit and flo	nd) ructure of cell a ant parts, and to copical study ar ower.(BL1-Rem s identification,	and permanent slide preparation  nd its inclusions.(BL2-Understand) o organize their modifications(BL1-  nd identification of tissues pertinent to stem, nember) blood group, blood pressure and tidal volume										
Course Elements	Skill Development X Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X		SDG1(No poverty) SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	1	1	-	-	-	3	-	2	-	2
CO2	2	-	1	-	-	-	-	-	-	-	3	-	2	-	2
CO3	2	1	-	-	-	-	-	-	-	-	2	-	1	1	1
CO4	2	2	-	-	-	1	1	-	-	-	2	-	1	1	1
CO5	2	3	1	-	-	1	-	-	-	-	2	-	1	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Human Anatomy and Physio	uman Anatomy and Physiology II										
Course Code	BP201T											
Course Outcomes & Bloom's Level	human body.(BL1-Remembe CO2- Describe the various ho Understand) CO3- Identify the various tiss Apply) CO4- Perform the hematologi bleeding/clotting time etc and respiratory volume.(BL3-App	er) omeostatic mechones and organs ical tests like blood also record bloody	e and functions of various organs of the nanisms and their imbalances(BL2-of different systems of human body(BL3-ood cell counts, haemoglobin estimation, od pressure, heart rate, pulse and of different organs of each system(BL2-									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	2	2	-	1	-	-	3	-	3	-	2
CO2	1	-	-	1	-	1	-	1	-	-	3	-	3	-	2
CO3	3	-	-	1	1	1	-	-	-	-	3	-	2	-	2
CO4	1	-	-	1	1	1	-	2	-	-	2	-	2	-	2
CO5	1	-	-	2	1	1	1	1	-	-	2	-	2	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Organic (	harmaceutical Organic Chemistry I											
Course Code	BP202T												
Course Outcomes & Bloom's Level	organic compounds.(BL3-CO2- To remember the ori Remember) CO3- To apply the knowled CO4- To discuss chemistry Understand)	Apply) entation of reac  dge for the iden y and reactions  acepts of hybrid	nenclature, properties, reactions and uses of ctions and influence products.(BL1- itification of organic compounds.(BL3-Apply) of various organic compounds.(BL2- ization, electronic and steric effects of organic										
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	Skill Development   Entrepreneurship   Employability   Professional Ethics   Gender   Human Values   SDG (Goals)  SDG3(Good health and well-being)  SDG4(Quality education)  SDG9(Industry Innovation and Infrastruction)											

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	3	-	2	-	-	-	3	-	3	-	2
CO2	2	-	-	-	3	-	1	-	-	-	3	-	1	-	2
CO3	2	2	-	-	2	-	-	-	-	-	3	-	2	-	2
CO4	2	1	-	-	1	-	1	-	-	-	3	-	1	-	2
CO5	2	1	1	-	1	-	-	-	-	-	3	-	1	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Biochemistry		
Course Code	BP203T		
Course Outcomes & Bloom's Level	CO2- To understand the metal transport and ATP formation(B CO3- To apply the concept of drugs, diagnostic and theraped	acids, proteins ar bolism of carbohy BL2-Understand) catalytic activity a utic applications of ss of DNA replica	nd amino acids(BL1-Remember) ydrates and process of electron and enzyme inhibition in design of new of enzyme(BL3-Apply) ation, transcription and translation(BL2-
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	1	-	-	-	-	3	-	2	1	3
CO2	2	1	-	-	1	-	-	-	-	-	3	-	2	1	2
CO3	2	2	-	-	-	-	-	-	-	-	3	-	2	1	1
CO4	3	2	-	1	1	-	1	-	-	-	2	-	1	-	1
CO5	3	1	-	1	1	-	-	-	-	-	2	-	-	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pathophysiology									
Course Code	BP204T									
Course Outcomes & Bloom's Level	adaptations. (BL2-Understand CO2- To understand the etiopa diseases mentioned. (BL2-Understand CO3- To apply the principles of complications of disease states CO4- To explain the etiopathog gastrointestinal, muscular skeldiseases. (BL1-Remember)	) Ithogenesis of callerstand) If pathogenesis in sementioned.(BL3) Genesis of hemateetal diseases and	• • • /							
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X  SDG (Goals) SDG3(Good health and well-being SDG4(Quality education)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	1	-	1	-	-	3	-	3	-	3
CO2	3	2	-	-	-	1	-	1	-	-	3	-	2	-	2
CO3	2	-	-	-	-	1	-	1	-	-	3	-	2	-	2
CO4	2	2	-	1	1	-	-	-	-	-	3	-	2	-	2
CO5	3	1	-	1	-	-	-	-	-	-	3	-	1	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Computer Applications in Pharma	omputer Applications in Pharmacy *											
Course Code	BP205T												
	CO1- To understand different type databases in pharmacy.(BL2-Und CO2- To illustrate the concept of r CO3- Applications of web technologianguages, Web servers and phar CO4- To evaluate the applications services, pharmacokinetics, mather pharmacy etc.,(BL5-Evaluate) CO5- To explain about bioinforma Remember)	lerstand) number system in congies such as HTM macy drug databate of computers in placematical model in constants.	computers.(BL2-Understand) ML, XML, CSS, programming se. (BL3-Apply) harmacy such as drug information drug design, hospital and clinical										
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG5(Gender equality)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	P08	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	1	-	-	1	1	-	1	-	-	3	2	1	1	1
CO2	-	1	-	-	1	1	-	1	-	-	2	2	1	1	1
CO3	-	1	-	-	1	1	-	1	-	-	2	1	1	1	1
CO4	-	1	-	1	1	-	-	-	-	-	3	1	-	-	-
CO5	-	-	-	1	-	1	-	-	-	-	1	1	-	1	-
CO6	_	-	-	_	_	_	-	-	-	-	_	-	_	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Environmental sciences '	k	
Course Code	BP206T		
	Remember) CO2- To compare the nat problems associated with CO3- To motivate the lear improvement.(BL3-Apply CO4- To analyze the condanalyze)	ural, renewable them.(BL2-Ur ners to particip t) cepts of eco sy	vironment and its allied problems(BL1- e and nonrenewable resources and the nderstand) cate in environment protection and estem including structure and functions.(BL4- and solving environmental problems.(BL3-
Course Elements	Skill Development X Entrepreneurship X Employability X Professional Ethics X Gender X Human Values ✓ Environment ✓	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG7(Affordable and clean energy) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production) SDG13(Climate action) SDG15(Life on land)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	3	-	-	-	2	-	-	-	-
CO2	-	-	-	-	-	-	3	-	-	-	3	-	-	-	-
CO3	-	-	-	-	-	-	3	1	-	-	2	-	-	-	-
CO4	-	-	-	-	-	-	3	-	-	-	1	-	-	-	-
CO5	-	-	-	-	-	-	2	1	-	-	2	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fine art and Music II *	ne art and Music II *											
Course Code	BP211T												
	Understand)	- Study of three-dimensional space and its organizational possibilities( <b>BL2</b> -erstand)											
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	-	-	-	-	-	-	-	2	2	-	-	-	-
CO2	2	-	-	-	-	-	-	-	-	1	3	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	_	_	_	-	-	-	-	-	_	-	-	_	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Human Anatomy and Physiol	uman Anatomy and Physiology II											
Course Code	BP207P												
	with the help of models, charts CO3- To analyze the functions functions.(BL4-Analyze) CO4- To evaluate body tempe	imens.(BL1-Remember)  - To develop the knowledge on coordinating working of organs of various systems the help of models, charts and specimens.(BL3-Apply)  - To analyze the functions of cranial nerves by various sensory and motor cions.(BL4-Analyze)  - To evaluate body temperature and body mass index.(BL5-Evaluate)  - To determine tidal volume and vital capacity.(BL3-Apply)											
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	1	1	-	-	-	-	3	-	3	-	1
CO2	2	1	-	-	1	1	-	-	-	-	2	-	3	-	1
CO3	2	1	-	-	1	1	-	-	-	-	2	-	2	-	1
CO4	3	-	-	-	-	1	-	-	-	-	3	-	2	-	2
CO5	2	-	1	1	1	-	-	-	-	-	3	-	2	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Organic Cl	narmaceutical Organic Chemistry I											
Course Code	BP208P	208P											
Course Outcomes & Bloom's Level	CO2- To identify the extra e (BL2-Understand) CO3- To analyze the preser compounds.(BL4-Analyze) CO4- To appraise the rules compounds.(BL5-Evaluate CO5- To analyze unknown	ompounds.(BL1-Remember) O2- To identify the extra elements, present in the pharmaceutical organic compounds. BL2-Understand) O3- To analyze the presence of several functional groups in pharmaceutical ompounds.(BL4-Analyze) O4- To appraise the rules concerned with reactivity and orientation of organic ompounds.(BL5-Evaluate) O5- To analyze unknown pharmaceutical organic compounds by determining their elting point/boiling point.(BL4-Analyze)											
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	-	-	-	-	-	-	-	-	3	-	2	3	1
CO2	3	2	-	-	2	-	-	1	-	-	3	-	3	2	1
CO3	2	1	-	-	1	-	-	-	-	-	3	-	2	2	2
CO4	2	2	-	-	1	-	1	-	-	-	2	-	2	1	1
CO5	3	1	-	-	1	1	-	-	-	-	2	-	2	2	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Biochemistry	iochemistry											
Course Code	BP209P												
Course Outcomes & Bloom's Level	Understand) CO3- To identify the amount of CO4- To examine and evaluating significance (BL5-Evaluate)	Premember) D2- To understand the principle and clinical significance of blood glucose(BL2-inderstand) D3- To identify the amount of reducing sugars by DNSA method(BL3-Apply) D4- To examine and evaluate the constituents present in Urine and their clinical gnificance(BL5-Evaluate) D5- To determine the effect of temperature and substrate concentration on salivary											
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	3	-	2	-	-	-	-	3	-	3	1	2
CO2	2	1	-	2	1	-	-	-	-	-	3	-	1	1	2
CO3	3	3	-	2	-	1	-	-	-	-	3	-	3	1	2
CO4	2	2	-	2	-	-	-	-	-	-	3	-	1	-	3
CO5	2	2	-	1	-	-	-	-	-	-	2	-	2	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Computer Applications in Pharma	acy *									
Course Code	BP210P										
Course Outcomes & Bloom's Level	and MS Power point.(BL1-Reme CO2- To understand the paradign one language from each model, C CO3- To summarize the report an Understand) CO4- To design a questionnaire unabout a particular disease.(BL3-A	O1- To demonstrate and make use of MS Office, MS Word, MS Excel, MS Access and MS Power point. (BL1-Remember) O2- To understand the paradigms of program languages and be exposed to at least the language from each model, C and SQL. (BL2-Understand) O3- To summarize the report and printing the report from patient database (BL2-Inderstand) O4- To design a questionnaire using a word processing package to gather information bout a particular disease. (BL3-Apply) O5- To create HTML web page to show personal information (BL6-Create)									
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education)								

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	1	-	-	1	-	-	-	-	1	2	-	1	1	1
CO2	-	1	-	-	1	-	-	-	-	-	1	-	1	1	1
CO3	-	1	-	-	2	-	-	-	-	-	1	-	1	1	1
CO4	-	1	-	-	1	1	-	-	-	-	2	-	1	2	_
CO5	-	1	-	-	2	-	-	-	-	-	2	-	-	-	1
CO6	-	_	-	-	_	_	-	_	-	-	-	_	_	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Organic Che	harmaceutical Organic Chemistry II											
Course Code	BP301T												
Course Outcomes & Bloom's Level	Remember) CO2- To understand the concrancidity of oils(BL2-Understand) CO3- To Account for reactivity CO4- To gain knowledge on of (BL4-Analyze)	D2- To understand the concept of hydrolysis, hydrogenation, saponification and noidity of oils(BL2-Understand) D3- To Account for reactivity/stability of compounds(BL3-Apply) D4- To gain knowledge on chemistry of phenols, aromatic amines and aromatic acids. L4-Analyze) D5- To gain knowledge on structure and medicinal uses of pharmaceutical organic											
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	-	2	-	1	-	1	-	3	-	3	-	2
CO2	3	1	-	-	1	-	-	-	-	-	3	-	2	-	2
CO3	2	-	-	-	1	-	1	-	1	-	2	-	3	-	3
CO4	2	1	-	-	1	-	-	-	-	-	2	-	2	1	1
CO5	2	-	-	-	2	-	-	-	-	-	2	-	1	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Physical Pharmaceutics I		
Course Code	BP302T		
Course Outcomes & Bloom's Level	physiochemical properties to CO2- To gain knowledge of pharmaceutical formulations CO3- To understand the prinactive agents in drug solubili CO4- To elaborate the signifiand stability of dosage forms	design dosage of and buffers a .(BL3-Apply) ociple of interfact zation.(BL2-Unicance of physics.(BL1-Remembles of diffusion	and their use in the stabilization of ial tension and the applications of surface derstand) cal properties of drug molecules in design ber) in biological systems and the the concepts
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	3	-	2	-	-	-	-	-	3	-	3	-	1
CO2	2	3	2	-	1	-	-	-	-	-	3	-	2	-	2
CO3	2	2	3	-	2	-	-	-	-	-	3	-	1	2	3
CO4	2	1	3	-	2	1	-	-	-	-	3	-	1	1	3
CO5	1	2	3	-	1	-	-	-	-	-	3	-	3	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Microbiolog	harmaceutical Microbiology											
Course Code	BP303T	303T											
	microorganisms(BL2-Unde CO2- To understand the imp pharmaceutical processing CO3- To Learn sterility testil CO4- Carried out microbiology	rstand) cortance and im and industry(BL ng of pharmace ogical standardiz ulture technolog											
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment ✓	SDG (Goals)	SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	1	2	-	-	-	-	-	3	-	3	-	3
CO2	3	2	-	1	2	-	-	-	-	-	3	-	2	-	2
CO3	2	1	-	-	1	1	-	-	-	-	3	-	2	-	2
CO4	2	2	-	-	2	-	-	-	-	-	3	-	2	-	2
CO5	2	1	-	-	1	-	-	-	-	-	3	-	1	-	3
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Engineer	narmaceutical Engineering											
Course Code	BP304T												
	Remember) CO2- To understand the r CO3- To perform various process(BL3-Apply) CO4- To carry out various	naterial handli processes invo test to prever arious prevent	ng techniques(BL2-Understand) blved in pharmaceutical manufacturing at environmental pollution(BL3-Apply) ive methods used for corrosion control in tand)										
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth) SDG9(Industry Innovation and Infrastructure) SDG12(Responsible consuption and production)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	-	-	2	-	-	-	-	-	3	-	2	-	1
CO2	2	2	1	-	-	2	-	-	-	-	3	-	2	-	2
CO3	2	3	-	-	1	2	-	-	-	-	2	-	2	-	1
CO4	3	2	2	-	-	2	-	-	-	-	2	-	1	1	1
CO5	2	1	-	1	1	2	-	-	-	-	1	-	1	-	1
CO6	-	-	-		-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fine art and Music III/online certi	e art and Music III/online certification course *											
Course Code	BP309T												
	three-dimensional space and its c												
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	_	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Organic Cho	emistry II										
Course Code	BP305P											
	pharmaceutical chemistry.(B CO3- To identify the purity of value and perform various re CO4- To analyze named reacarbonyl compounds(BL4-A CO5- To test the knowledge	j ,										
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics × Gender × Human Values × Environment ×											

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	2	1	-	-	-	-	-	3	-	1	-	3
CO2	2	3	-	2	1	-	-	-	-	-	2	-	2	-	3
CO3	3	1	-	-	2	-	-	2	-	-	2	-	1	1	1
CO4	2	2	-	1	-	-	-	-	-	-	3	-	1	1	1
CO5	3	1	-	1	-	-	-	-	-	-	1	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Physical Pharmaceutics I		
Course Code	BP306P		
Course Outcomes & Bloom's Level	tension, partition coefficient a CO2- To explain adsorption is using activated charcoal.(BL: CO3- To apply Henderson – drugs(BL3-Apply) CO4- To determine the surfacemethods and deduce the HLI surfactant(BL4-Analyze)	and pKa in the desotherms and desotherms and desotherms and desorbed and equal to the desother a	ical properties such as solubility, surface esign of dosage forms(BL2-Understand) etermine Freundlich-Langmuir constant uation for interpretation of pKa value of mple liquids by drop count and drop weight cal micellar concentration of a omplexes by solubility and pH titration
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	3	1	1	-	-	-	-	-	3	-	2	2	3
CO2	3	2	1	-	1	-	-	-	-	-	3	-	2	1	1
CO3	2	1	1	1	2	-	-	-	1	-	1	-	-	1	2
CO4	2	2	2	-	1	-	-	-	1	-	2	-	1	1	1
CO5	1	1	3	1	-	-	1	-	-	-	2	-	-	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Microbiology	harmaceutical Microbiology											
Course Code	BP307P												
	CO1- Understand methods of idemicroorganisms(BL2-Understan CO2- To Learn sterility testing of CO3- Carried out microbiological CO4- To demonstrate various statining(BL3-Apply) CO5- To choose the correct methe Evaluate)	<b>d)</b> pharmaceutical pro standardization of aining methods – si	oducts(BL3-Apply) Pharmaceuticals(BL4-Analyze) mple, gram staining and acid fast										
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	-	-	1	-	-	-	-	-	3	-	2	-	3
CO2	2	2	-	-	2	-	-	1	-	-	2	-	2	-	2
CO3	3	2	1	-	1	-	1	-	-	-	3	-	1	-	2
CO4	3	2	1	1	1	1	-	1	-	-	3	-	1	2	1
CO5	2	3	1	-	1	-	1	-	-	-	3	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Engineering		
Course Code	BP308P		
Course Outcomes & Bloom's Level	CO1- To know various unit operation Understand) CO2- To demonstrate and explain pharmaceutical equipments such and freeze dryer. (BL3-Apply) CO3- To experiment with the procesame (BL3-Apply) CO4- To determine overall heat trathe efficiency of steam distillation (CO5- To estimate moisture contercalcium carbonate and starch (BL8)	about the construction as colloid mill, pland ess variables of filt ensfer coefficient because of the best on drying and the best on drying and the construction of th	ction, working and applications of letary mixer, fluidized bed dryer ration, evaporation and infer the y heat exchanger and calculate
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	1	1	-	-	-	-	-	3	-	2	-	2
CO2	2	3	2	2	2	-	-	-	-	-	3	-	2	-	2
CO3	3	2	1	1	1	-	-	-	-	-	2	-	1	-	3
CO4	2	2	1	1	2	-	-	-	-	-	2	-	3	1	2
CO5	3	1	1	-	1	-	-	-	-	-	1	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Organic Chemist	ry III	
Course Code	BP401T		
Course Outcomes & Bloom's Level	heterocyclic compounds.(BL2-Un CO2- To understand the fundame CO3- To identify medicinal uses a Apply) CO4- To explain stereo isomerism activity.(BL1-Remember) CO5- To elaborate the reactions a (NaBH4 & LiAlH4), Clemmensen rearrangement.(BL2-Understand	derstand) ntals of stereo cher nd other application in biphenyl compound synthetic import reduction, Oppena	mical aspects(BL2-Understand) ns of organic compounds.(BL3- ounds and conditions for optical tance of metal hydride reduction
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	P08	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	1	-	-	-	2	-	2	-	3	1	3
CO2	2	1	2	-	2	-	-	-	1	-	2	-	2	-	2
CO3	2	2	2	-	3	-	-	-	-	-	2	-	3	1	2
CO4	2	-	-	-	2	-	-	-	-	-	3	-	2	-	1
CO5	3	-	-	-	1	-	-	-	-	-	2	-	1	-	1
CO6	-	_	-	-	_	-	-	-	-	-	-	-	-	-	_



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Medicinal Chemistry I		
Course Code	BP402T		
Course Outcomes & Bloom's Level	CO2- To explain the physmetabolic pathways(BL2 CO3- To identify the structory Analyze) CO4- To categorize the duses(BL2-Understand)	sicochemical pr -Understand) ctural requirem lrugs based on	edicinal compounds(BL1-Remember) roperties, steric aspects of drugs and their ents of drugs to elicit biological response(BL4- their mechanism of action and clinical c routes for medicinal compounds.(BL6-Create)
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth) SDG12(Responsible consuption and production)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	3	-	1	-	-	-	2	-	3	-	2	-	3
CO2	2	2	2	-	2	-	-	-	1	-	2	-	2	-	2
CO3	3	1	1	-	1	-	-	-	1	-	2	-	3	-	3
CO4	3	-	-	-	1	-	-	-	1	-	2	-	2	-	2
CO5	3	-	-	-	2	-	-	-	-	-	3	-	1	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Physical Pharmaceutics II		
Course Code	BP403T		
Course Outcomes & Bloom's Level	co1- To introduce and categorize properties and applications of collections of collections are propertied and applications of collections and applications of collections (BL3-Apply) co3- To interpret the rheological compression.(BL2-Understand) co4- To determine the properties development.(BL4-Analyze) co5- To formulate and evaluate of electrical properties.(BL5-Evaluate collections)	loidal dispersions.(I es of kinetics in the behavior of fluids a s of powders and ap coarse dispersions	BL2-Understand) stabilization of dosage forms. and illustrate the physics of tablet oply them in formulation
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	-	1	-	-	-	2	-	3	-	1	2	1
CO2	2	2	2	-	-	-	-	-	1	-	2	-	2	2	2
CO3	3	3	3	-	2	-	-	-	1	-	2	-	3	1	3
CO4	3	1	1	1	1	-	-	-	1	-	2	-	2	1	2
CO5	2	1	2	1	1	-	-	-	1	-	3	-	2	2	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacology I										
Course Code	BP404T										
Course Outcomes & Bloom's Level	CO2- To understand the basic interactions and drug discove CO3- To identify the role of nervous system.(BL4-Analyz CO4- To analyze the function nervous system.(BL4-Analyz nervous system.(BL4-Analyz nervous system.)	armacokinetics(BL1-Remember)  12- To understand the basics of pharmacodynamics, adverse reactions, drug eractions and drug discovery(BL2-Understand)  13- To identify the role of neurohumoral transmission and drugs acting on peripheral evous system.(BL4-Analyze)  14- To analyze the functions of neurotransmitters and drugs acting on central									
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)								

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	3	3	-	1	3	-	-	2	-	2	-	1	1	1
CO2	2	2	2	-	-	2	-	-	1	-	3	-	1	1	2
CO3	3	3	3	-	2	3	-	-	2	-	2	-	-	1	1
CO4	2	3	2	-	3	1	-	-	1	-	2	-	1	1	1
CO5	1	2	1	-	2	1	-	-	1	-	2	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacognosy and Phy	narmacognosy and Phytochemistry I										
Course Code	BP405T											
Course Outcomes & Bloom's Level	(BL1-Remember) CO3- To illustrate student crude drugs.(BL2-Unders CO4- To plan systematic drugs, marine drugs and to	emember) O2- To remember different sources of crude drugs and also classify them accordingly.										
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment ✓	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG12(Responsible consuption and production)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	-	1	2	-	-	2	-	2	-	1	-	2
CO2	3	2	1	-	1	1	-	-	2	-	1	-	2	-	1
CO3	2	1	2	-	1	2	-	-	2	-	2	-	2	-	1
CO4	2	-	-	-	-	-	-	-	2	-	2	-	1	-	2
CO5	3	-	-	-	-	-	-	-	1	-	1	-	1	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Fine art and Music IV/ onlin	e certification co	urse *
Course Code	BP410T		
Course Outcomes & Bloom's Level	Understand)	CRF processing,	cal data mangement and its skills(BL2- and documentation forms(BL2- rtunities(BL3-Apply)
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	-	1	-	-	-	-	-	-	2	-	1	-	-
CO2	1	1	-	-	-	-	-	-	-	-	2	-	-	-	-
CO3	1	1	-	-	-	-	-	-	-	-	1	-	-	-	1
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Medicinal Chemistry I	edicinal Chemistry I											
Course Code	BP406P	.06P											
	intermediates(BL2-Unders CO3- To synthesize, chara intermediates(BL6-Create CO4- To analyze the select percentage purity(BL4-An	emember) O2- To explain the techniques involved in isolation and purification of drugs and itermediates(BL2-Understand) O3- To synthesize, characterize and purify medicinal compounds and itermediates(BL6-Create) O4- To analyze the selected drugs present in dosage forms and to determine the ercentage purity(BL4-Analyze) O5- To determine the physicochemical property of drugs and draw its											
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG1(No poverty) SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)											

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	-	1	-	-	-	2	-	2	-	1	1	1
CO2	2	-	2	-	2	-	-	-	1	-	2	-	2	1	2
CO3	2	2	3	-	2	-	-	-	1	-	2	-	2	1	2
CO4	3	-	-	-	2	-	-	-	2	-	2	-	1	1	2
CO5	2	-	-	-	1	-	-	-	-	-	2	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Physical Pharmaceutics I	I									
Course Code	BP407P										
Course Outcomes & Bloom's Level	Evaluate) CO2- To interpret the shele (BL5-Evaluate) CO3- To make use of deriformulation.(BL3-Apply) CO4- To distinguish the ra	D2- To interpret the shelf life of a given formulation by accelerated stability studies. L5-Evaluate) D3- To make use of derived and flow properties of powders to ensure a stable solid rmulation.(BL3-Apply) D4- To distinguish the rate constants as per the chemical reaction.(BL2-Understand) D5- To determine the viscosity using Ostwald's and Brookfield's viscometer.(BL4-									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	Skill Development  Entrepreneurship  Employability  Professional Ethics  Gender  Human Values   SDG (Goals)  SDG4(Quality education) SDG9(Industry Innovation and Infrastructure)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	-	1	-	-	-	2	-	2	-	1	1	1
CO2	2	1	2	-	2	-	-	-	1	-	2	-	2	2	2
CO3	3	1	-	-	3	-	-	-	1	-	2	-	3	1	3
CO4	2	1	-	-	2	-	-	-	2	-	3	-	1	1	1
CO5	3	1	-	-	1	-	-	-	1	-	2	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacology I		
Course Code	BP408P		
Course Outcomes & Bloom's Level	experimental pharmacology guidelines. (BL2-Understar CO2- To demonstrate the colood withdrawal, anestheti CO3- To interpret the effect oesophagus in correlation v CO4- To analyse the effect relaxants and affecting loco	y and to organize  ommon laborate  cs and euthante  s of various dre  vith humans(B)  of drugs acting  motor activity i	ommon laboratory animals used in ze animal house as per the CPCSEA tory techniques like routes of administration, asia used for animal studies(BL3-Apply) ugs on rabbit eye and ciliary motility of frog L5-Evaluate) as enzyme inducers, skeletal muscle in laboratory animals(BL4-Analyze) catatonic activity of drugs in rats/mice(BL5-
Course Elements	Skill Development √ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG9(Industry Innovation and Infrastructure) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-	1	-	-	1	-	-	2	-	2	1	2
CO2	2	2	2	-	2	-	-	-	-	-	2	-	2	1	2
CO3	3	3	3	-	3	-	-	-	-	-	3	-	3	2	3
CO4	2	-	-	-	-	-	-	-	-	-	2	-	1	1	1
CO5	3	1	-	-	1	-	-	-	-	-	2	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacognosy and Phyt	ochemistry I	
Course Code	BP409P		
	crude drugs.(BL1-Remem CO2- To understand the co CO3- To evaluate the crude CO4- To evaluate the crude	ber) ellular structure e drugs by qual e drugs by phys	of crude drugs.(BL2-Understand) Intitative evaluation methods.(BL5-Evaluate) Intical methods of evaluation.(BL5-Evaluate) Indical methods of evaluation.(BL5-Evaluate)
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG11(Sustainable cities and economies)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	3	-	1	-	-	-	1	-	3	-	1	-	1
CO2	3	2	2	-	2	-	-	-	2	-	2	-	2	1	2
CO3	2	1	3	-	3	-	-	-	1	-	2	-	3	-	1
CO4	3	1	-	-	-	-	-	-	1	-	2	-	1	1	1
CO5	3	1	-	-	-	-	-	-	1	-	2	-	1	1	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Medicinal Chemistry II		
Course Code	BP501T		
Course Outcomes & Bloom's Level	Remember) CO2- To explain the biologous CO3- To apply the knowled of action and therapeutic CO4- To understand the ractivity(BL2-Understand)	gical targets fo edge of biocher uses of drugs(I elationships be	r medicinal compounds(BL2-Understand) mical processes to understand the mechanism BL3-Apply) etween structure of compound and its selected category of drugs(BL4-Analyze)
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG12(Responsible consuption and production)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	-	1	2	-	-	-	-	-	3	-	3	-	3
CO2	2	2	-	1	2	-	-	-	-	-	2	-	2	1	2
CO3	3	3	-	1	2	-	-	-	-	-	2	-	3	-	3
CO4	3	1	-	-	1	_	-	-	-	-	2	-	1	-	2
CO5	2	1	-	-	1	_	-	-	-	-	3	-	1	-	-
CO6	-	-	-	-	-	_	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Industrial Pharmacy I		
Course Code	BP502T		
Course Outcomes & Bloom's Level	development and stability of d CO2- To discuss the formulation tablets (BL2-Understand) CO3- To review the formulation Analyze) CO4- To illustrate the pharma Understand)	osage forms.(BL on, manufacturing on and manufacturing ceutical aspects	ig, coating and quality control tests of uring considerations of liquid orals.(BL4-
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	3	1	-	-	-	1	-	3	-	3	1	2
CO2	3	2	2	3	-	-	-	-	1	-	3	-	2	2	2
CO3	3	1	2	3	1	-	-	-	-	-	3	-	2	2	3
CO4	3	2	3	-	-	-	-	-	1	-	3	-	-	-	-
CO5	2	1	3	1	1	-	-	-	-	-	3	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacology II		
Course Code	BP503T		
	complications.(BL2-Understa CO2- To illustrate the drugs addiuretics.(BL2-Understand) CO3- To identify the role of au CO4- To analyze and summar	nd) cting on hematop tocoids and relativities the drugs activities activities and role of sex	ing on endocrine system.(BL4-Analyze) hormones and to assess the effects of
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	-	-	-	2	3	-	-	-	-	3	1	2	3	2
CO2	2	-	-	-	1	2	-	-	-	-	3	-	2	3	1
CO3	2	1	-	-	1	3	-	-	-	-	3	1	2	3	1-
CO4	2	1	-	-	2	3	-	-	-	-	3	-	2	3	2
CO5	3	-	-	-	1	2	-	-	-	-	2	1	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacognosy and Phytoche	emistry II	
Course Code	BP504T		
Course Outcomes & Bloom's Level	(BL1-Remember) CO2- To the pharmacognistic stannins, volatile oils etc,(BL2-UCO3- To demonstrate the different and analysis of Phytoconstitue (BL2-Understand) CO4- To plan the industrial pro (BL6-Create)	study of secondar  Jnderstand)  rent types and stents like terpenoid  duction, estimation	r plants and their biogenetic studies.  ry metabolites like alkaloids, glycosides, eps involved in isolation, identification is, glycosides, alkaloids and resins. on and utilization of Phytoconstituents. hods of extraction, spectroscopy, -Analyze)
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment ✓	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	-	1	-	-	-	3	-	2	2	3
CO2	2	2	-	-	-	-	-	-	-	-	3	-	2	1	2
CO3	3	2	-	-	-	-	-	-	-	-	2	-	1	1	1
CO4	2	1	1	-	-	-	1	-	-	-	2	-	-	-	1
CO5	2	-	-	-	-	-	-	-	-	-	1	-	1	-	_
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Jurisprud	ence									
Course Code	BP505T										
Course Outcomes & Bloom's Level	CO2- To relate the significate relation to import and man CO3- To apply the knowled 1940 and its rules 1945 and CO4- To understand the fueducation regulations in phase CO5- To appraise the importance of the cost.	crmination of pregnancy and intellectual property rights (BL1-Remember)  O2- To relate the significance of Drugs and cosmetics act 1940 and its rules 1945 in elation to import and manufacture of drugs (BL2-Understand)  O3- To apply the knowledge on schedules pertaining to Drugs and cosmetics act 940 and its rules 1945 and also administration of the act and rules (BL3-Apply)  O4- To understand the functions of pharmacy councils and implementation of ducation regulations in pharmacy (BL2-Understand)  O5- To appraise the importance of medicinal and toilet preparations act and narcotic rugs and psychotropic substances act and rules (BL5-Evaluate)									
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender ✓ Human Values ✓ Environment X	Skill Development ✓ Entrepreneurship × Employability × Professional Ethics × Gender ✓ Human Values ✓  SDG (Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG10(Reduced inequalities) SDG12(Responsible consuption and production)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	-	-	-	-	-	-	3	-	-	-	-	-	2	3
CO2	-	-	-	-	-	-	-	3	-	1	-	-	1	2	2
CO3	-	-	-	-	-	-	-	3	-	-	-	-	1	2	-
CO4	-	-	-	-	-	-	-	3	-	1	-	-	-	-	3
CO5	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Industrial Pharmacy I	dustrial Pharmacy I										
Course Code	BP506P	506P										
Course Outcomes & Bloom's Level	O1- To interpret the pre-formulation studies on drugs.(BL2-Understand) O2- To explain the preparation, evaluation and coating of tablets.(BL2-Understand O3- To design parenteral and ophthalmic products.(BL3-Apply) O4- To illustrate the formulation and evaluation of capsules.() O5- To evaluate glass containers as per pharmacopeial specifications.()											
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	3	2	-	-	-	-	-	-	3	-	1	3	3
CO2	2	2	3	1	-	-	-	-	-	-	3	-	1	2	3
CO3	3	1	3	-	-	-	-	-	-	-	3	-	3	-	2
CO4	3	1	1	1	-	-	-	-	-	-	3	-	2	-	2
CO5	3	1	2	1	-	_	-	-	-	-	3	_	1	-	2
CO6	-	-	-	-	-	_	-	-	-	-	-	_	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacology II											
Course Code	BP507P											
	Understand) CO2- To illustrate the diuretic a CO3- To identify the dose resp construct the drug concentratio software.(BL3-Apply) CO4- To categorize the PA2 ar and guinea pig ileum.()	rious drugs on isolated frog heart, blood pressure and heart rate of dog.(BL2-nderstand)  O2- To illustrate the diuretic activity of drugs in mice/rats(BL2-Understand)  O3- To identify the dose response relationship, effect of drugs on DRC and to instruct the drug concentrations by various bioassay methods using animal simulator of tware.(BL3-Apply)  O4- To categorize the PA2 and PD2 value of drugs using rat anococcygeus muscle										
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	-	-	2	3	-		-	-	3	-	1	2	3
CO2	2	1	-	-	1	3	-	-	-	-	3	-	1	2	2
CO3	3	2	-	-	3	3	-	-	-	-	3	-	-	-	2
CO4	2	-	-	-	2	2	-	-	-	-	3	-	-	-	2
CO5	3	-	-	-	2	2	-	-	-	-	2	-	-	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacognosy and Phytoch	Pharmacognosy and Phytochemistry II											
Course Code	BP508P												
	morphological characteristics. CO2- To identify the powder n substituents present.(BL2-Un CO3- To analyze and evaluate microscopical characteristics. CO4- To isolate the drug from	O1- To remember the wide variety of the crude drugs and their sources by orphological characteristics.(BL2-Understand) O2- To identify the powder mixture and to report the types of adulterants and bestituents present.(BL2-Understand) O3- To analyze and evaluate the powdered crude drug samples by morphological and croscopical characteristics.(BL3-Apply) O4- To isolate the drug from the given crude drug sample.() O5- To predict the crude drug by performing chromatographic techniques.()											
Course Elements	Skill Development   Entrepreneurship   Employability   Professional Ethics   Gender   Human Values   Environment   Entrepreneurship   SDG (Goals)   SDG3(Good health and well-being  SDG3(Good health												

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	-	1	-	-	-	3	-	2	2	1
CO2	2	-	-	-	-	-	1	-	-	-	3	-	1	2	2
CO3	3	-	-	-	-	-	1	-	-	-	3	-	-	-	2
CO4	2	-	-	-	-	-	-	-	-	-	3	-	2	-	1
CO5	2	-	-	-	-	-	1	-	-	-	2	-	-	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Online certified courses related to Pharmacy I *									
Course Code	BP509ET									
Course Outcomes & Bloom's Level	I- To gain the skill and knowldege in pharmaceutical domain(BL2-Understand)									
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)								

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	-	-	-	-	-	-	3	1	-	-	2
CO2	2	2	2	1	-	-	-	-	-	-	2	1	1	1	1
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	International Regulator	ternational Regulatory Requirements for Good Manufacturing Practices											
Course Code	BP510ET	P510ET											
	Understand)		level for global regulatory agency (BL2- y management guidelines in real scenario(BL2-										
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG12(Responsible consuption and production) SDG16(Peace Justice and strong institutions)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	1	-	-	-	-	-	3	1	1	1	1
CO2	2	1	1	1	1	-	-	-	-	-	2	1	1	1	1
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Product Dev	narmaceutical Product Development											
Course Code	BP511ET												
Course Outcomes & Bloom's Level	Understand) CO2- To outline the role of did development(BL2-Understant CO3- To select the excipients CO4- To classify different of primary and secondary package.	O2- To outline the role of different pharmaceutical excipients in product evelopment(BL2-Understand) O3- To select the excipients for a specific drug product(BL3-Apply) O4- To classify different of packaging for the drug product and materials used for imary and secondary packaging.() O5- To choose optimization technique in the development of pharmaceutical drug											
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	Skill Development   Entrepreneurship   Employability   Professional Ethics   Gender   Human Values   SDG (Goals)  SDG3(Good health and well-being SDG4(Quality education)											

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	3	1	1	-	-	-	-	-	3	-	2	1	1
CO2	2	2	1	1	1	-	-	-	-	-	1	-	1	1	1
CO3	3	1	2	1	1	-	-	-	-	-	3	-	2	2	2
CO4	2	1	2	1	1	-	-	-	-	-	1	-	1	1	1
CO5	1	1	2	2	1	-	-	-	-	-	3	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Purification of Pharmaceutical Compounds	
Course Code	BP512ET	
& Bloom's Lovel	CO1- To understand the basics of impurites in pharma CO2- To gain the knowledge of techniques to purify the impuriteis the basics of impurites in pharmaceuticals(B	e compounds and remove the
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	-	-	-	-	-	-	3	-	1	1	1
CO2	2	2	2	1	-	-	-	-	-	-	3	2	-	1	1
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Introduction to intellectual	roduction to intellectual property rights										
Course Code	BP513ET	513ET										
Course Outcomes & Bloom's Level	CO2- To make the pharmadactivities therein.(BL2-Und	cy students awa erstand) anding of the In armaceutical in of intellectual	property and TKDL()									
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	2	-	1	-	-	-	3	-	2	3	-	1	1	1
CO2	-	1	-	-	-	-	-	3	-	-	2	-	1	-	1
CO3	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	2	-	-	2	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	1	-	-	-	_
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Medicinal Chemistry III		
Course Code	BP601T		
Course Outcomes & Bloom's Level	design (BL2-Understand) CO2- Understand the chemis Understand) CO3- To recall the classification origin(BL3-Apply) CO4- To Know the importance	try of drugs with incomencial on and nomencial of SAR of drugs hes in drug desig	n including QSAR, pharmacophore
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	1	2	-	-	-	-	-	3	-	1	2	3-
CO2	2	3	-	-	1	-	-	-	-	-	2	-	1	2	3
CO3	3	2	-	-	2	-	-	-	-	-	2	-	1	2	3
CO4	3	2	-	1	2	-	-	-	-	1	3	1	1	1	1
CO5	2	2	-	1	1	-	-	-	-	1	1	-	1	1	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacology III		
Course Code	BP602T		
Course Outcomes & Bloom's Level	Understand) CO2- Comprehend the princip and (BL2-Understand) CO3- Appreciate correlation of Apply) CO4- To assess the various ty poisoning and management of the control of	ples of toxicology of pharmacology of pes of toxicity st f various poisone	gastrointestinal complications(BL2- and treatment of various poisonings with related medical sciences.(BL3- udies, principles of treatment of ed conditions() nificance leading to chronotherapy()
Course Elements	Skill Development ✓ Entrepreneurship X Employability X Professional Ethics X Gender X Human Values X Environment X	SDG3(Good health and well-being) SDG4(Quality education)	

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	2	2	-	-	-	-	3	-	1	2	2
CO2	2	2	-	-	-	1	-	-	-	-	3	-	1	2	3
CO3	1	2	-	-	1	1	-	-	-	-	2	-	1	2	2
CO4	3	1	-	-	-	1	-	-	-	-	2	-	-	-	3
CO5	3	1	-	-	1	1	-	-	-	-	2	-	2	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Herbal Drug Technology	bal Drug Technology										
Course Code	BP603T	D3T										
Course Outcomes & Bloom's Level	drug product(BL2-Under CO2- To Know the WHO Understand) CO3- To know the herbal CO4- To Appreciate pate	stand) and ICH guide cosmetics, na nting of herbal	urce of herbal drugs from cultivation to herbal lines for evaluation of herbal drugs(BL2-tural sweeteners, nutraceuticals(BL3-Apply) drugs, GMP() prospects of the herbal drug industry()									
	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment ✓	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG7(Affordable and clean energy) SDG8(Decent work and economic growth) SDG11(Sustainable cities and economies) SDG12(Responsible consuption and production)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	-	2	-	-	-	3	-	1	2	2
CO2	3	2	-	-	-	-	2	-	-	-	3	-	1	2	2
CO3	1	2	-	-	-	-	2	-	-	-	3	-	1	2	2
CO4	2	2	-	-	-	-	1	-	-	-	2	-	2	-	1
CO5	3	2	-	-	-	-	1	-	-	-	2	-	1	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Biopharmaceutics and Pharr	opharmaceutics and Pharmacokinetics										
Course Code	BP604T											
Course Outcomes & Bloom's Level	and their significance.(BL2-UCO2- To Use of plasma drug parameters to describe the ki excretion, elimination.(BL2-UCO3- To understand the concroducts and their significanc CO4- To Understand various applications.()	nderstand) concentration-ti netics of drug al nderstand) cepts of bioavail e.(BL3-Apply) pharmacokinetic	opharmaceutics and pharmacokinetics me data to calculate the pharmacokinetic bsorption, distribution, metabolism, ability and bioequivalence of drug c parameters, their significance & and to compare the bioequivalence									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	1	2	-	-	-	-	-	3	-	3	2	3
CO2	3	2	2	1	2	-	-	-	-	-	3	-	1	-	3
CO3	2	2	1	-	2	-	-	-	-	-	3	-	1	2	-
CO4	2	3	1	1	2	-	-	-	-	-	3	-	1	1	1
CO5	3	1	2	1	2	-	-	-	-	-	2	1	-	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Biotechnolog	armaceutical Biotechnology										
Course Code	BP605T											
	Industries(BL2-Understand) CO2- To understand the Gen pharmaceuticals(BL2-Understand) CO3- To know the Importance CO4- To Appreciate the use of	etic engineering a stand) e of Monoclonal a of microorganism	pilized enzymes in Pharmaceutical applications in relation to production of antibodies in Industries(BL3-Apply) as in fermentation technology() ransformation and various immunological									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	-	-	-	-	-	3	-	1	2	2
CO2	2	2	-	1	-	-	-	-	-	-	3	-	1	2	2
CO3	2	2	-	-	-	-	-	-	-	-	2	-	1	2	2
CO4	3	1	-	-	-	-	-	-	-	-	3	-	1	1	2
CO5	3	2	-	1	-	1	-	-	-	-	2	-	1	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Quality Assurance		
Course Code	BP606T		
Course Outcomes & Bloom's Level	importance of documentation(ICO2- Understand the scope of industries such as ISO, NABL Understand) CO3- Understand the responsico4- To evaluate the complain regulatory guidelines()	BL2-Understand f quality certificati and QbD concep ibilities of QA & Content and document	ons applicable to pharmaceutical ts in pharmaceutical industry.( <b>BL2</b> -
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	1	2	-	-	-	-	-	3	-	1	2	1
CO2	1	2	-	1	2	-	-	-	-	-	3	-	1	2	1
CO3	2	2	-	1	2	-	-	-	-	-	3	-	1	-1	3
CO4	3	1	-	1	2	-	-	-	-	-	3	-	1	-	2
CO5	2	1	-	1	1	-	-	-	-	-	2	-	1	-	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Medicinal Chemistry III	edicinal Chemistry III										
Course Code	BP607P											
	Understand) CO2- To explain principle ur CO3- To choose the method CO4- To compare the advar of drugs()	nderlying the pre d for assay of dru ntages of microw	reparation of drugs and intermediates(BL2- eparation of drugs(BL2-Understand) ugs by quantitative analysis(BL3-Apply) vave technique over conventional synthesis eochemical properties and biological									
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	2	1	-	-	-	-	-	3	-	1	2	1
CO2	3	2	-	3	1	-	-	-	-	-	2	-	1	2	2
CO3	2	1	-	2	2	-	-	-	-	-	3	-	1	2	2
CO4	2	2	-	1	1	-	-	-	-	-	2	-	-	-	2
CO5	3	1	-	1	1	-	-	-	-	-	1	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacology III		
Course Code	BP608P		
Course Outcomes & Bloom's Level	antiallergic activity / anti-ulcer a CO2- To demonstrate of effect agonist/antagonists on guinea CO3- o analyze effect of saline and test for pyrogens using rate CO4- To evaluate acute oral to eye irritation / corrosion of a te	activity in rat mode of drugs on gast pig ileum(BL2-U e purgative on fro obit method(BL3- exicity (LD50), act st substance()	rointestinal motility and the effect of nderstand) g intestine, insulin hypoglycemic effect
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	-	-	-	3	-	-	-	-	2	-	1	2	2
CO2	3	1	-	-	-	3	-	-	-	-	3	-	1	2	1
CO3	3	2	-	-	-	2	-	-	-	-	3	-	1	2	1
CO4	2	1	-	-	-	2	-	-	-	-	2	-	-	-	1
CO5	3	2	-	-	-	2	-	-	-	-	1	-	1	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Herbal Drug Technology	bal Drug Technology										
Course Code	BP609P	9P										
I COURSE CHITCOMAS	Understand) CO2- To evaluate the vari CO3- To apply monograp Apply)	ous herbal forn hic analysis of h	phytochemical screening of crude drugs(BL2-nulations(BL2-Understand) nerbal drugs as per pharmacopoeias(BL3-dehyde and phenol contents() ner content()									
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	2	1	-	-	-	-	-	-	-	-	-	1	2	-
CO2	1	2	1	-	-	-	-	-	-	-	-	-	1	-	1
CO3	1	2	1	-	-	-	-	-	-	-	-	-	-	2	-
CO4	3	2	1	1	-	-	-	-	-	-	-	-	1	2	1
CO5	2	1	1	-	-	-	-	-	-	-	-	_	-	-	_
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Online certified courses relate	d to Pharmacy II	*											
Course Code	BP610T													
		- Explore the clinical trial process, the basics of good clinical practice, and the ry of regulatory frameworks for medical treatment and testing.(BL2-Understand)												
Course Elements	Skill Development X Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)											

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	2	-	1	3	-	-	-	-	3	-	1	2	3
CO2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Artificial intelligence in P	icial intelligence in Pharmaceutical											
Course Code	BP611ET												
Course Outcomes & Bloom's Level	(BL2-Understand) CO2- Recognize and cou CO3- Implement AI in rea (BL3-Apply) CO4- To gain the knowle	inter prevalent inter prevalent in interpretable interpretable in interpretable interpretable interpretable in interpretable inter	on of AI applications in pharmaceutical domain.  myths associated with AI.(BL2-Understand) eutical use cases without the need for coding.  w to implement in healthcare() ing for healthcare applications()										
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG9(Industry Innovation and Infrastructure) SDG17(Partnerships for the goals)										

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	-	2	3	-	-	-	-	-	3	-	1	1	2
CO2	2	2	1	-	1	-	-	-	-	-	2	2	1	1	1
CO3	2	3	1	1	1	-	-	-	-	-	1	1	1	1	1
CO4	1	2	1	1	1	-	-	-	-	-	1	1	1	1	1
CO5	1	1	1	1	-	-	-	-	-	-	-	1	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Good Manufacturing in Ph	ood Manufacturing in Pharma										
Course Code	BP612ET	612ET										
	medicinal products for hum guidelines(BL2-Understar CO2- To have the confiden premises, storage facilities CO3- To get familiar with the	1- To be able to understand the basics of Good Manufacturing Practice for dicinal products for human use and the current legal regulations and delines(BL2-Understand) 2- To have the confidence to outline the main GMP requirements related to mises, storage facilities and personnel;(BL2-Understand) 3- To get familiar with the principles of the GMP quality system and quality control the important procedures when dealing with complaints and recalls(BL3-Apply)										
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG4(Quality education) SDG12(Responsible consuption and production)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	1	2	-	2	2	1	-	3	-	1	1	1
CO2	2	2	-	1	3	-	2	1	1	-	2	-	1	1	1
CO3	1	1	-	1	1	-	1	1	1	-	1	-	1	1	1
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	_	-	-	-	_	-	_	_	-	-	-	-	-	-	_
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Healthcare Marketplace Ca	ealthcare Marketplace Capstone										
Course Code	BP613ET											
Course Outcomes & Bloom's Level	CO2- Gain a foundational u	- Learn new concepts from industry experts(BL2-Understand) - Gain a foundational understanding of a subject or tool, Develop job-relevant skills hands-on projects(BL2-Understand)										
Course Elements	Skill Development X Entrepreneurship X Employability  Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	1	-	-	-	-	-	3	1	1	1	1
CO2	2	1	1	-	1	1	-	-	1	-	2	1	1	1	1
CO3	1	1	1	1	1	-	-	-	-	-	1	1	1	1	2
CO4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Instrumental Methods of An	alysis	
Course Code	BP-701T		
Course Outcomes & Bloom's Level	chromatographic methods) a Understand) CO2- Gain knowledge on intunderstanding at the level of inorganic compounds with d pharmacy.(BL2-Understand CO3- Characterization and Apply) CO4- Simplify affinity of matchemical properties of matters.	and differentiate teraction of EMI f atom, group a ifferent function d) estimation of ion ter with stationa er.()	alytical techniques (spectroscopic and with volumetric analysis. (BL2-R) with matter and to build the analytical and molecular structure of organic and all groups and their applications in as by spectroscopical techniques (BL3-ary phase and mobile phase, physical and ganic compounds using suitable ques.()
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	-	1	2	-	-	-	-	3	-	1	2	1
CO2	2	3	-	2	-	-	-	-	-	-	3	-	1	1	1
CO3	2	2	-	1	-	-	-	-	-	-	3	-	1	1	2
CO4	2	2	-	-	-	-	-	-	-	-	2	-	1	2	1
CO5	2	2	-	-	-	-	-	-	-	-	2	-	1	1	-
CO6	_	-	_	-	_	_	-	-	_	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Industrial Pharmacy II		
Course Code	BP702T		
Course Outcomes & Bloom's Level	drug approval (BL3-Apply) CO4- To analyze and study vario	of technology trans rious responsibilitie	,
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	2	-	-	-	-	-	-	-	3	-	3	2	1
CO2	3	3	1	-	-	-	-	-	-	-	3	-	3	2	1
CO3	2	2	1	1	-	-	2	-	-	-	3	-	3	2	1
CO4	3	1	1	-	-	-	-	-	-	-	2	-	3	2	1
CO5	2	3	3	-	-	-	-	-	-	-	2	-	1	1	-
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacy Practice		
Course Code	BP703T		
Course Outcomes & Bloom's Level	distribution and hospital formul (BL2-Understand) CO2- To outline the organization ability to design and run own c CO3- To demonstrate the known history interview and to apply t (BL3-Apply) CO4- categorize and evaluate therapeutic committee, drug intraining programmes in hospital	ary in hospitals a on and structure community pharmal vledge of therape he knowledge on the role of hospit formation service als.()	of hospitals, various methods of and apply it in the practice of pharmacy.  of community pharmacy and to build acy.(BL2-Understand)  eutic drug monitoring, patient medication assessment of drug related problems.  all pharmacist in pharmacy and es, patient counseling, education and ecific disease states to provide better
Course Elements	Skill Development X Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender ✓ Human Values ✓ Environment X	SDG (Goals)	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG6(Clean water and sanitation)

				_	_	_	_		_						
COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	-	-	-	2	-	-	-	-	3	-	1	2	1
CO2	3	1	-	1	-	2	-	-	-	-	3	-	1	1	1
CO3	2	2	-	-	-	1	-	-	-	-	3	-	1	1	1
CO4	3	1	-	1	-	2	-	-	-	-	2	-	1	1	1
CO5	2	1	-	1	-	1	1	-	-	-	2	-	1	2	1
CO6	-	-	-	-	-	-	-	_	-	-	-	_	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Novel Drug Delivery System										
Course Code	BP704T										
Course Outcomes & Bloom's Level	controlled drug delivery system CO2- To outline the concepts of implantable drug delivery system CO3- To develop and study or systems over conventional dos CO4- To illustrate the principle site-specific drug delivery systems of CO5- To predict the rate and more controlled in the controlled site of the controlled in t	of trolled drug delivery systems (BL2-Understand) Of trolled drug delivery system. (BL2-Understand) Of trolled drug delivery systems for prolonged action. (BL3-Apply) Of trolled drug delivery systems of drug targeting in the design of the design of trolled delivery system. (I) Of trolled drug delivery systems delivery systems by modifying conventional dosage forms (I)									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education)								

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	3	-	3	-	-	-	-	-	3	-	2	1	1
CO2	2	1	2	-	2	-	-	-	-	-	3	-	2	2	2
CO3	3	2	2	1	2	-	-	-	-	-	3	-	2	1	1
CO4	2	1	3	-	2	-	-	-	-	-	3	-	1	1	1
CO5	2	1	1	1	1	-	-	-	-	-	2	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Instrumental Methods of Ana	lysis	
Course Code	BP705P		
Course Outcomes & Bloom's Level	chromatographic methods) ar Understand) CO2- Gain knowledge on inte understanding at the level of a inorganic compounds with diffipharmacy(BL2-Understand) CO3- Characterization and es Apply) CO4- Simplify affinity of matter chemical properties of matter.	nd differentiate warraction of EMR statem, group and ferent functional stimation of ions or with stationary () anic and inorgan	with matter and to build the analytical molecular structure of organic and groups and their applications in by spectroscopical techniques(BL3-v phase and mobile phase, physical and nic compounds using suitable
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth)

COs	PO1	PO2	PO3	PO4	PO5	P06	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	3	1	1	-	1	-	-	-	3	-	1	1	1
CO2	3	1	2	1	1	-	1	-	-	-	3	-	1	1	1
CO3	2	2	2	1	1	-	1	-	-	-	3	-	1	1	1
CO4	2	1	3	1	1	-	1	-	-	-	2	-	1	2	1
CO5	2	1	1	2	1	-	-	-	-	-	3	-	1	1	1
CO6	-	-	_	-	-	_	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Practice School *		
Course Code	BP706PS		
Course Outcomes & Bloom's Level	domains such as community testing, clinical practice, pate article writing.(BL2-Underst CO2- To get familiarize with (BL2-Understand) CO3- To develop knowledge interest.(BL3-Apply) CO4- To analyze the problem theoretical knowledge to res	/ pharmacy, druent filing, regular and) the aspects of the aspects of the aspects of the aspects of the and skills related the appropriate the appropriate the aspects of t	stic learning through practice in various in testing and manufacturing, preclinical atory filing accounting, green audit and realistic practice in the domain of interest. The domain of interest in the domain of during realistic practice and make use of olems.()  In the domain of interest after becoming an
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender ✓ Human Values ✓ Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	P08	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	2	1	1	1	2	2	-	-	3	-	2	1	1
CO2	2	-	1	1	-	-	-	-	-	-	2	-	1	1	1
CO3	1	-	1	-	1	-	-	-	-	-	2	-	-	1	1
CO4	1	1	1	1	1	-	-	-	-	-	3	-	-	1	1
CO5	3	-	1	1	-	-	-	-	1	-	2	-	-	-	-
CO6	_	_	_	-	_	_	_	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Biostatistics and Research	ostatistics and Research Methodology										
Course Code	BP801T	801T										
	and correlation.(BL2-Unde CO2- To make use of regre methods.(BL2-Understand CO3- To explain the need of explain methodological des CO4- To assess the need of various statistical problems	rstand) ssion and prob I) If research, res igns.(BL3-App If regression mo I) perform various	odeling and to build up the ability to use s parametric and non parametric statistical									
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG4(Quality education) SDG8(Decent work and economic growth) SDG17(Partnerships for the goals)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	2	3	1	-	-	-	-	2	-	2	1	1
CO2	2	1	1	2	3	1	-	-	-	-	2	-	1	1	1
CO3	3	1	1	1	3	1	-	-	-	-	2	-	1	1	1
CO4	2	1	1	1	3	1	-	-	-	-	1	-	-	1	2
CO5	2	1	1	2	3	1	-	-	-	-	1	-	1	2	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



# Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Social and Preventive Ph	armacy	
Course Code	BP802T		
Course Outcomes & Bloom's Level	CO2- To create awareness and non-communicable d CO3- To apply the knowles serve the society.(BL3-ApCO4- To evaluate the heap	s about variou iseases.(BL2-ledge of nationa oply) lth and pharma	th and health education.(BL2-Understand) s preventive measures of stated communicable Understand) I health programmes mentioned in real world to acy related problems in societal perspective.() o-cultural factors and urbanization on health.()
Course Elements	Skill Development X Entrepreneurship X Employability ✓ Professional Ethics X Gender ✓ Human Values ✓ Environment X	SDG (Goals)	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG10(Reduced inequalities) SDG12(Responsible consuption and production) SDG15(Life on land) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	-	-	-	3	3	3	1	-	1	-	1	3	1
CO2	2	-	-	-	-	3	3	3	1	-	1	-	1	2	1
CO3	3	-	-	-	-	3	2	3	1	-	1	-	1	3	1
CO4	2	1	-	-	-	3	2	2	-	-	2	-	1	2	1
CO5	2	-	-	1	-	3	2	1	-	-	-	-	1	2	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Project Work		
Course Code	BP813PW		
	CO3- To write and preser CO4- To design the drug	e into practicaÌ r nt thesis work <b>(E</b> product by usin	manner (BL2-Understand)
Course Elements	Skill Development X Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG6(Clean water and sanitation) SDG8(Decent work and economic growth)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	3	3	3	1	-	-	-	-	1	-	1	-	1
CO2	2	1	2	3	2	1	-	-	-	-	2	-	1	-	1
CO3	2	1	2	3	2	1	-	-	-	-	1	-	1	-	2
CO4	3	2	2	-	1	-	-	-	-	-	1	-	3	3	1
CO5	3	3	1	-	1	1	-	-	-	-	2	-	-	-	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmaceutical Regulatory	Science	
Course Code	BP804ET		
Course Outcomes & Bloom's Level	and generic drug product de CO2- To perceive the regula ANDA and to know about che CO3- To familiar with Regula Australia, Japan and Canad CO4- To know the regulator which include to understand ACTD.()	evelopment.( <b>BL</b> atory approval panges to an apatory authoritie la.( <b>BL3-Apply</b> ) by registration pand about technicatess of clinical technical	process and timelines for IND, NDA and oproved NDA/ANDA. (BL2-Understand) is and agencies like India, USA, Europe, rocess of Indian drugs in overseas market all documents like DMF, CTD, eCTD and trials and pharmacovigilance as well as to
Course Elements	Skill Development X Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X	SDG (Goals)	SDG1(No poverty) SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG10(Reduced inequalities) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	3	-	-	-	3	2	1	-	1	2	-	2	2	1
CO2	3	2	-	1	-	2	2	1	-	-	1	-	2	1	1
CO3	2	3	1	-	-	1	2	1	-	-	2	-	2	2	2
CO4	3	3	-	1	-	3	2	1	-	1	2	-	2	2	1
CO5	3	3	1	1	-	3	2	1	_	-	2	_	-	2	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharmacovigilance		
Course Code	BP805ET		
Course Outcomes & Bloom's Level	basic terminologies in Phar CO2- To make use of varior information resources in ph CO3- To explain various meduring ADR reporting (BL3-CO4- To appraise safety dates).	macovigilance(us drug disease armacovigilance) ethods of pharnetapply) at a generation a vaccine safety	e classifications, drug dictionaries and drug de (BL2-Understand) nacovigilance and communication process and ICH guidelines in pharmacovigilance.() in special population and to appraise the
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG4(Quality education) SDG8(Decent work and economic growth) SDG11(Sustainable cities and economies) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	-	2	1	-	2	3	2	2	-	-	-	-	1	2	1
CO2	-	2	1	-	1	2	2	1	-	-	-	-	1	1	1
CO3	-	1	1	-	2	2	2	1	-	-	-	_	1	1	2
CO4	-	1	1	-	1	2	2	1	-	-	-	-	1	1	1
CO5	-	1	1	-	2	2	1	2	-	-	-	-	1	-	-1
CO6	_	-	-	-	-	_	-	-	_	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Pharma Marketing Manage	ement	
Course Code	BP803ET		
Course Outcomes & Bloom's Level		mix for pharmacypes of sales pro eutical marketing	g channels()
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	2	1	-	2	2	1	1	-	2	1	-	2	1	1
CO2	2	2	1	-	1	2	1	1	-	1	1	-	1	1	1
CO3	3	1	1	-	1	2	1	1	-	2	1	-	1	1	1
CO4	3	1	2	-	1	1	1	1	-	1	2	-	1	1	1
CO5	2	2	1	-	1	2	1	1	-	2	1	-	1	1	-
CO6	-	-	_	-	-	_	-	-	_	-	-	_	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Quality Control and Standardi	zation of Herbals	
Course Code	BP806ET		
Course Outcomes & Bloom's Level	Understand) CO2- To illustrate and outline to including CGMP, GAP, GMP and CO3- To compare the quality of and ICH guidelines.(BL3-Appl CO4- To improve the knowledge GMP, WHO guidelines on safe	he quality assurand GLP.(BL2-Underontrol parameter by)  ge on regulatory in the monitoring of the control parameter by the control parameter	ity control of herbal drugs(BL2- ince in traditional system of medicine derstand) s of drugs according to European union ssues for herbal medicine including herbal medicine in Pharmacovigilance() ny in standardization of herbal drugs
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	3	1	1	-	-	-	-	-	2	-	1	1	1
CO2	2	2	3	1	1	-	-	-	-	-	2	-	1	1	1
CO3	1	1	2	1	1	-	-	-	-	-	1	-	1	1	1
CO4	1	1	1	1	1	-		-	-	-	2	-	1	2	-
CO5	1	1	1	1	-	-	-	-	-	-	1	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Computer Aided Drug Desig	gn	
Course Code	BP807ET		
	based on metabolism and cl Understand) CO2- To explain the develop of physicochemical paramet CO3- To make use of molec Apply) CO4- To apply the molecula ligand with molecular targets CO5- To explain the applicat	inical observation oment, approach ers(BL2-Under ular modeling a r docking techn s() tion s of bioinfor	overy, drug development, lead discovery on and also analog based drug design(BL2-hes of QSAR, importance and determination rstand) and virtual screening techniques(BL3-iques to examine the binding interactions of rmatics, chemo informatics, ADME rmaceutical databases relevant to drug
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG9(Industry Innovation and Infrastructure)

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	2	2	-	1	1	-	-	1	1	2	-	1	1	2
CO2	1	2	1	-	2	1	-	-	1	2	2	-	1	1	-
CO3	1	2	1	-	1	1	-	-	-	-	1	-	1	2	2
CO4	1	2	1	-	2	-	-	-	1	1	2	-	1	2	1
CO5	1	2	1	-	1	1	-	-	-	1	1	-	1	1	1
CO6	_	_	_	-	-	_	-	-	_	-	-	_	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Cell and Molecular Biology	/	
Course Code	BP808ET		
Course Outcomes & Bloom's Level	cell membranes / cellular re CO2- To illustrate DNA stru (transcription/translation).(I CO3- To organize protein s protein synthesis.(BL3-App CO4- To distinguish the sci analysis. CO5: To interpret	eproduction.(E acture and fund BL2-Understa structure, patho ply) ience of genet mitosis / meio	ctioning, RNA and protein synthesis
Course Elements	Skill Development X Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG5(Gender equality) SDG8(Decent work and economic growth) SDG10(Reduced inequalities) SDG12(Responsible consuption and production) SDG15(Life on land) SDG17(Partnerships for the goals)

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	1	1	-	1	1	-	-	1	-	1	-	1	2	1
CO2	3	1	1	-	1	-	-	-	1	-	2	-	1	1	3
CO3	3	1	1	-	1	1	-	-	-	-	1	-	2	1	2
CO4	3	1	1	-	1	1	-	-	1	-	1	-	1	1	3
CO5	2	1	1	-	-	1	-	-	-	-	1	-	-	1	2
CO6	-	_	-	-	-	-	_	-	-	-	-	-	_	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Cosmetic Science	esmetic Science										
Course Code	BP809ET	309ET										
	problems associated with skir CO2- To understand the princare products and hair care p CO3- To describe the role of the cosmetics(BL3-Apply) CO4- To evaluate various cos CO5- To apply the knowledge	oducts, cosmetic excipients and recall the basic structure, functions and common oblems associated with skin, hair and oral cavity.(BL2-Understand)  O2- To understand the principles of formulation and building blocks of various skin re products and hair care products.(BL2-Understand)  O3- To describe the role of herbs in cosmetics and analytical methods for										
Course Elements	Skill Development ✓ Entrepreneurship ✓ Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG4(Quality education) SDG8(Decent work and economic growth)									

COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	1	1	1	3	-	-	-	-	1	-	1	-	2	1	1
CO2	1	1	1	2	-	-	-	-	1	-	2	-	1	1	1
CO3	1	1	-	1	-	-	-	-	-	-	2	-	-	1	-
CO4	1	1	1	-	1	-	-	-	-	-	1	-	-	1	1
CO5	1	1	1	-	1	-	-	-	1	-	1	-	-	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Experimental Pharmacolog	operimental Pharmacology											
Course Code	BP810ET												
Course Outcomes & Bloom's Level	of experiments on laborator laboratory/transgenic/ mutablood collection and euthan CO2- To outline various preantiasthmatics and drugs a CO3- To construct preclinic anesthetics(BL3-Apply) CO4- To analyze the preclir	ry animals and int animals, valuasia.( <b>BL2-Und</b> eclinical screen cting on CNS.(al screening mical screening	rious routes of administration, techniques of derstand) ing models for diuretics, nootropics,										
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X	SDG (Goals)	SDG3(Good health and well-being) SDG4(Quality education) SDG8(Decent work and economic growth) SDG12(Responsible consuption and production) SDG17(Partnerships for the goals)										

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	1	1	-	1	1	-	-	-	-	2	-	3	1	2
CO2	2	1	1	-	2	1	-	-	-	-	1	-	3	1	2
CO3	2	1	1	-	2	-	-	-	-	-	1	-	3	1	2
CO4	2	1	1	-	-	1	-	-	-	-	2	-	3	1	2
CO5	2	1	1	-	2	-	-	-	-	-	1	-	3	1	2
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Advanced Instrumentation Te	chniques	
Course Code	BP811ET		
Course Outcomes & Bloom's Level	analytical techniques (spectro Understand) CO2- To gain knowledge on ir understanding at the level of a inorganic compounds with diff pharmacy.(BL2-Understand) CO3- To maximize knowledge spectroscopical and thermal to CO4- To simplify the important as per ICH and USFDA guide	scopy, chromaton nteraction of EM atom, group and erent functional e on characteriza echniques(BL3- ce of calibration lines.()	re involved in selected instrumental ography and thermal methods)(BL2-R with matter and to build the analytical molecular structure of organic and groups and their applications in ation and estimation of drugs by Apply) and validation of analytical instruments cedure employed in radio immunoassay
Course Elements	Skill Development ✓ Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values X Environment X		SDG4(Quality education) SDG15(Life on land) SDG17(Partnerships for the goals)

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COs	PO1	PO2	PO3	PO4	PO5	P06	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	-	2	1	1	-	-	-	1	-	2	-	1	2	2
CO2	2	-	2	-	-	-	-	-	2	-	1	-	1	1	1
CO3	2	-	2	1	1	-	-	-	1	-	2	-	1	-	1
CO4	2	1	2	1	1	-	-	1	1	-	1	-	2	1	2
CO5	3	-	2	2	2	-	-	-	1	1	2	-	1	1	1
CO6	-	_	_	-	-	-	-	-	-	_	_	-	-	-	-



## Course mapping with relevance to the local, regional, national, and global developmental needs

Title of the Course	Dietary Supplements and	Nutraceuticals	3									
Course Code	BP812ET											
	CO2- To remember the so Nutraceuticals and functio CO3- To interpret the appl probiotics, Tocopherols, p CO4- To discuss the regul Nutraceuticals and their p	etary supplements.(BL2-Understand)  D2- To remember the sources, chemical nature, medicinal uses and health benefits of utraceuticals and functional foods.(BL2-Understand)  D3- To interpret the applications of phytochemicals as Nutraceuticals. flavonoids, obiotics, Tocopherols, proteins, minerals etc.(BL3-Apply)  D4- To discuss the regulatory aspects, adulteration of dietary fibres and utraceuticals and their pharmacopoeial specifications.()  D5- To analyse the role of dietary fibres and complex carbohydrates as functional										
Course Elements	Skill Development X Entrepreneurship X Employability ✓ Professional Ethics X Gender X Human Values ✓ Environment X		SDG1(No poverty) SDG2(Zero hunger) SDG3(Good health and well-being) SDG4(Quality education) SDG12(Responsible consuption and production)									

COs	PO1	PO2	PO3	PO4	PO5	PO6	P07	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	2	-	1	-	1	1	-	-	-	-	2	-	1	1	1
CO2	3	-	1	-	-	1	-	-	-	-	1	-	1	2	1
CO3	2	-	1	-	1	1	-	-	-	-	2	-	1	1	-
CO4	2	-	1	-	1	1	-	-	-	-	1	-	1	1	1
CO5	2	-	1	-	1	1	-	-	-	-	2	-	1	1	1
CO6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-