



MONAD UNIVERSITY

Estd.Under U.P. Govt. University Act 23 of 2010 & U/S 2(f) of the U.G.C. Act 1956.
N.H.24, Delhi Hapur Road, Village & Post – Kastla, Kasmabad,
P.O. Pilkhuwa – 245101, District Hapur (U.P.) India
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Course Plan

Program- D. Pharm - I

Course ER20-12T PHARMACEUTICAL CHEMISTRY

Session - 2021-22

S. No.	Day	Subject	L	T	P	Total
1	D Day					
2	D+1	Introduction to Pharmaceutical chemistry: Scope and objectives	1	0	0	1
3	D+2	Sources and types of errors: Accuracy, precision, significant figures	1	0	0	1
4	D+3	Impurities in Pharmaceuticals: Source and effect of impurities in Pharmacopoeial substances	1	0	0	1
5	D+4	importance of limit test	1	0	0	1
6	D+5	Principle and procedures of Limit tests for chlorides	1	0	0	1
7	D+6	Principle and procedures of Limit tests for sulphates,	1	0	0	1
8	D+7	Principle and procedures of Limit tests for iron.	1	0	0	1
9	D+8	Principle and procedures of Limit tests for heavy metals	1	0	0	1

10	D+9	Principle and procedures of Limit tests for arsenic	1	0	0	1
11	D+10	Tutorial (Problem solving session/ class test)	0	1	0	1
		Total	8	1		8
12	D+11	Volumetric Analysis: Fundamentals Of Volumetric Analysis.	1	0	0	1
13	D+12	Acid-Base Titration,	1	0	0	1
14	D+8	Non-Aqueous Titration	1	0	0	1
15	D+9	Precipitation Titration	1	0	0	1
16	D+10	Complexometric Titration	1	0	0	1
17	D+11	Redox Titration	1	0	0	1
18	D+12	Gravimetric Analysis: Principle and Method	1	0	0	1
19	D+13	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	8	1	0	8
20	D+11	Inorganic Pharmaceuticals: Pharmaceutical formulations, market preparations, storage conditions	1	0	0	1
21	D+12	uses of Haematinics: Ferrous sulphate, Ferrous fumarate, Ferric ammonium citrate, Ferrous ascorbate, Carbonyl iron	1	0	0	1
22	D+13	uses of Gastro-intestinal Agents: Antacids: Aluminium hydroxide gel, Magnesium hydroxide, Magaldrate, Sodium bicarbonate,	1	0	0	1
23	D+14	uses of Calcium Carbonate, Acidifying agents, Adsorbents, Protectives, Cathartics	1	0	0	1
24	D+15	uses of Topical agents: Silver Nitrate, Ionic Silver, Chlorhexidine Gluconate, Hydrogen peroxide, Boric acid, Bleaching powder, Potassium permanganate	1	0	0	1
25	D+16	uses of Dental products: Calcium carbonate, Sodium fluoride, Denture cleaners, Denture adhesives, Mouth washes	1	0	0	1
26	D+17	uses of Medicinal gases: Carbon dioxide, nitrous oxide, oxygen.	1	0	0	1
27	D+18	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	7	1	0	7
28	D+19	Introduction to nomenclature of organic chemical systems.	1	0	0	1

29	D+20	Particular reference to heterocyclic compounds containing up to Three rings	1	0	0	1
		Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	2	1	0	3
30	D+21	Drugs Acting on Central Nervous System • Anaesthetics: Thiopental Sodium*	1	0	0	
31	D+22	Ketamine Hydrochloride*, Propofol	1	0	0	1
32	D+23	Sedatives and Hypnotics: Diazepam*, Alprazolam*, Nitrazepam, Phenobarbital	1	0	0	1
33	D+24	Antipsychotics: Chlorpromazine Hydrochloride*, Haloperidol*,	1	0	0	1
34	D+25	Risperidone*, Sulpiride*, Olanzapine, Quetiapine, Lurasidone	1	0	0	1
35	D+26	Anticonvulsants: Phenytoin*, Carbamazepine*, Clonazepam,	1	0	0	1
36	D+27	Valproic Acid*, Gabapentin*, Topiramate, Vigabatrin, Lamotrigine	1	0	0	1
37	D+28	Anti-Depressants: Amitriptyline Hydrochloride*, Imipramine Hydrochloride*, Fluoxetine*, Venlafaxine, Duloxetine,	1	0	0	1
38	D+29	Sertraline, Citalopram, Escitalopram, Fluvoxamine, Paroxetine	1	0	0	1
39	D+30	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	9	0	0	10
40	D+31	Drugs Acting on Autonomic Nervous System • Sympathomimetic Agents: Direct Acting: NorEpinephrine*, Epinephrine, Phenylephrine, Dopamine*, Terbutaline, Salbutamol (Albuterol), Naphazoline*, Tetrahydrozoline.	1	0	0	1
41	D+32	Indirect Acting Agents: Hydroxy Amphetamine, Pseudoephedrine. Agents With Mixed Mechanism: Ephedrine, Metaraminol.	1	0	0	1
42	D+33	Adrenergic Antagonists: Alpha Adrenergic Blockers: Tolazoline, Phentolamine	1	0	0	1
43	D+34	Phenoxybenzamine, Prazosin. Beta Adrenergic Blockers: Propranolol*, Atenolol*, Carvedilol	1	0	0	1
44	D+35	• Cholinergic Drugs and Related Agents: Direct Acting Agents: Acetylcholine*, Carbachol, And Pilocarpine	1	0	0	1

45	D+36	Cholinesterase Inhibitors: Neostigmine*, Edrophonium Chloride, Tacrine Hydrochloride, Pralidoxime Chloride, Echothiopate Iodide	1	0	0	1
46	D+37	Cholinergic Blocking Agents: Atropine Sulphate*, Ipratropium Bromide	1	0	0	1
47	D+38	Synthetic Cholinergic Blocking Agents: Tropicamide, Cyclopentolate Hydrochloride, Clidinium Bromide, Dicyclomine Hydrochloride*	1	0	0	1
	D+39	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	8	1	0	9
48	D+40	Drugs Acting on Cardiovascular System • Anti-Arrhythmic Drugs: Quinidine Sulphate, Procainamide Hydrochloride, *	1	0	0	1
49	D+41	Verapamil, Phenytoin Sodium	1	0	0	1
50	D+42	Lidocaine Hydrochloride, Lorcainide Hydrochloride, Amiodarone and Sotalol	1	0	0	1
51	D+43	Anti-Hypertensive Agents: Propranolol*, Captopril*, Ramipril, Methyldopate Hydrochloride, Clonidine Hydrochloride, Hydralazine Hydrochloride, Nifedipine.	1	0	0	1
52	D+44	Antianginal Agents: Isosorbide Dinitrate	1	0	0	1
53	D+45	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	5	1	0	6
54	D+36	Diuretics: Acetazolamide, Frusemide*, Bumetanide, Chlorthalidone	1	0	0	1
55	D+37	Benzthiazide, Metolazone, Xipamide, Spironolactone	1	0	0	1
58	D+40	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	2	1	0	3
59	D+41	Analgesic And Anti-Inflammatory Agents: Morphine Analogues, Narcotic Antagonists; Nonsteroidal	1	0	0	1
60	D+42	AntiInflammatory Agents (NSAIDs) - Aspirin*, Diclofenac, Ibuprofen*, Piroxicam, Celecoxib, Mefenamic Acid,	1	0	0	1
61	D+43	Paracetamol*, Aceclofenac	1	0	0	1
62	D+44	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	3	1	0	4

63	D+45	Antifungal Agents: Amphotericin-B, Griseofulvin, Miconazole, Ketoconazole*, Itraconazole, Fluconazole*, Naftifine Hydrochloride	1	0	0	1
64	D+46	Urinary Tract Anti-Infective Agents: Norfloxacin, Ciprofloxacin, Ofloxacin*, Moxifloxacin,	1	0	0	1
65	D+47	Anti-Tubercular Agents: INH*, Ethambutol, Para Amino Salicylic Acid, Pyrazinamide, Rifampicin, Bedaquiline, Delamanid, Pretomanid*	1	0	0	1
66	D+48	Antiviral Agents: Amantadine Hydrochloride, Idoxuridine, Acyclovir*, Foscarnet, Zidovudine, Ribavirin, Remdesivir, Favipiravir	1	0	0	1
67	D+49	Antimalarials: Quinine Sulphate, Chloroquine Phosphate*	1	0	0	1
68	D+50	Primaquine Phosphate, Mefloquine*, Cycloguanil, Pyrimethamine, Artemisinin	1	0	0	1
69	D+51	Sulfonamides: Sulfanilamide, Sulfadiazine, Sulfamethoxazole.	1	0	0	1
70	D+52	Sulfacetamide*, Mafenide Acetate, Cotrimoxazole, Dapsone*	1	0	0	1
71	D+53	Tutorial (Problem solving session/ class test)	0	1	0	1
		TOTAL	8	1	0	9
72	D+54	Antibiotics: Penicillin G	1	0	0	1
73	D+55	Amoxicillin*	1	0	0	1
74	D+56	Cloxacillin	1	0	0	1
75	D+57	Streptomycin	1	0	0	1
76	D+58	Tetracyclines: Doxycycline	1	0	0	1
77	D+59	Minocycline	1	0	0	1
78	D+60	Macrolides: Erythromycin, Azithromycin	1	0	0	1
79	D+61	Miscellaneous: Chloramphenicol* Clindamycin	1	0	0	1
		TOTAL	8	0	0	8
80	D+62	Anti-Neoplastic Agents: Cyclophosphamide*, Busulfan, Mercaptopurine, Fluorouracil*, Methotrexate,	1	0	0	1
81	D+63	Dactinomycin, Doxorubicin Hydrochloride, Vinblastine	1	0	0	1
82	D+64	Sulphate, Cisplatin*, Dromostanolone Propionate	1	0	0	1



		TOTAL	3	0	0	3
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Course Plan

Program- D.Pharm-I

Course ER20-12P PHARMACEUTICAL CHEMISTRY-PRACTICAL

Session - 2021-22

S. No.	Day	Subject	L	T	P	Total
1	D Day					
2	D+1	To Prepare and Submit Chlorides	0	0	1	1
3	D+2	To Prepare and Submit sulphate	0	0	1	1
4	D+3	To Prepare and Submit Iron.	0	0	1	1
5	D+4	To Prepare and Submit heavy metals.	0	0	1	1
6	D+5	To Prepare and Submit standard solution of Sodium Hydroxide.	0	0	1	1
7	D+6	To Prepare and Submit standard solution of Potassium Permanganate.	0	0	1	1
8	D+7	To Prepare and Submit assay of Ferrous sulphate by redox titration.	0	0	1	1
9	D+8	To Prepare and Submit assay of Calcium gluconate-by complexometric	0	0	1	1
10	D+9	To Prepare and Submit assay of Sodium chloride-by Modified Volhard's method	0	0	1	1
11	D+10	To Prepare and Submit assay of Ascorbic acid by iodometry	0	0	1	1

			0	0	0	10
12	D+11	To Prepare and Submit assay of Ibuprofen by alkalimetry	0	0	1	1
13	D+12	To the Determination of Melting point of organic compound.	0	0	1	1
14	D+13	To the Determination of boiling point of organic compound.	0	0	1	1
15	D+14	To Prepare and submit Benzoic acid from Benzamide	0	0	1	1
16	D+15	To Prepare and Submit Picric acid from Phenol	0	0	1	1
17	D+16	To Identify and test for purity of Aspirin.	0	0	1	1
18	D+17	To Identify and test for purity of Caffeine.	0	0	1	1
19	D+18	To Identify and test for purity of Paracetamol	0	0	1	1
20	D+19	To Identify and test for purity of Sulfanilamide.	0	0	1	1
21	D+20	To evaluate the Identification tests for Anions and Cations as per Indian Pharmacopoeia	0	0	1	1
		TOTAL	0	0	01	10

