

Institute/School Name	Chitkara College of Pharmacy		
Department Name	Pharmacy		
Programme Name	B.Pharmacy		
Course Name	Pharmaceutical Inorganic Chemistry	Session	July-Dec 25
Course Code	BP-104T	Semester/Batch	1st /2025
L-T (Per Week)	3-1	Course Credits	4
Pre-requisite	Chemistry basic knowledge	NHEQF Level	5.5
Course Coordinator	Dr. Somdutt Mujwar		
SDG	3		

Objectives of the Course:

This subject deals with the monographs of inorganic drugs and pharmaceuticals. Upon completion of the course, student shall be able to know the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals; understand the medicinal and pharmaceutical importance of inorganic compounds.

Course Outcomes (COs)

Students should be able to:

	COs	Program Outcomes (PO)	NHEQF Level Descriptor	No. of Lectures
CO01	Well acquainted with the principles of limit tests.	2, 4	Q1	8
CO02	Familiar with different classes of inorganic pharmaceuticals and their analysis.	1, 3	Q3	8
CO03	Identification of different anions, cations and different inorganic pharmaceuticals.	1, 4, 8	Q3	7
CO04	Knowledge about the sources of impurities and methods to determine the impurities in inorganic drugs and pharmaceuticals.	2, 1, 4	Q1, Q2	7
CO05	To understand the medicinal and pharmaceutical importance of inorganic compounds.	1, 4, 6	Q1	8
CO06	To have been introduced to a variety of inorganic drug classes.	1	Q3	7
Total Contact Hours				45

CO-PO Mapping

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	Type of Assessment's
CO01	3											Formative/Summative
CO02		2	2									Formative/Summative
CO03											2	Formative/Summative
CO04										2		Formative/Summative
CO05									3	2		Formative/Summative
CO06	3			2								Formative/Summative

3=High, 2=Medium, 1=Low

Recommended Books:

B01: Chatwal, G.R. Textbook of Pharmaceutical inorganic Chemistry; Himalaya Publishing House.

B02: Bentley and Driver's Textbook of Pharmaceutical Chemistry.

B03: Indian Pharmacopoeia

B04: A.H. Beckett and J.B. Stenlake's, Practical Pharmaceutical Chemistry Vol I and II, Stahlone Press, 4th edition.

Serial No	Link of Journals, Magazines, websites and Research Papers
1.	www.pubmed.com
2.	www.sciencedirect.com
3.	www.google.com
4.	www.google scholar.com

Lecture Plan

Lec no.	Topic	Book no, Ch no, page no.	TLM	ALM	Web References	Audio Video
1	Impurities in pharmaceutical substances: History of Pharmacopoeia	B01: 04, 31-32	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/unit-ihistory-of-pharmacopoeia-and-limit-test/245032734	NA
2	Sources and types of impurities	B01: 04, 33-42	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/unit-ihistory-of-pharmacopoeia-and-limit-test/245032734	NA
3	principle involved in the limit test for Chloride	B01: 04, 47-49	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/3-limit-test-for-chloride-242439005/242439005	NA
4	limit test for Sulphate	B01: 04, 49-50	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/limit-test-for-sulphate-231546582/231546582	NA
5	limit test for Iron	B01: 04, 51-52	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/limit-test-for-iron-231408838/231408838	NA
6	limit test for Arsenic	B01: 04, 58-66	Lecture, reviewing	Lecture, Active learning,	https://www.slideshare.net/slideshow/limit-test-for-arsenic/242622500	NA
7	limit test for Lead	B01: 04, 54-58	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/limit-test-for-lead/242559791	NA
8	limit test for Heavy metals	B01: 04, 52-54	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/limit-test-for-heavy-metals/243285440	NA
9	modified limit test for Chloride	B01: 04, 50-51	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/modified-limit-tests-for-chlorides-and-sulphates/128927027	NA
10	modified limit test for Sulphate	B01: 04, 50-51	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/modified-limit-tests-for-chlorides-and-sulphates/128927027	NA
11-13	Acids, Bases and Buffers: Buffer equations and buffer capacity in general, buffers in	B01: 06, 103-127	Lecture	Lecture, Active learning,	https://www.slideshare.net/slideshow/unit-ii-acid-base-and-buffer/245032729	NA

	pharmaceutical systems, preparation,					
14	stability, buffered isotonic solutions, measurements of tonicity,	B01: 06, 115-123	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/unit-ii-acid-base-and-buffer/245032729	NA
15	calculations and methods of adjusting isotonicity.	B01: 06, 115-123	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/isotonicity-notes-osmosis-calculation-methods/266588251	NA
16-18	Major extra and intracellular electrolytes: Functions of major physiological ions	B01: 13, 266-272	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/unit-ii-major-extra-and-intracellular-electrolytes-245032861/245032861	NA
19	Electrolytes used in the replacement therapy: Sodium chloride	B01: 13, 273-279	Lectur e, review	Lecture, Active learning,	https://www.slideshare.net/slideshow/electrolyte-replacement-therapy-228151844/228151844	NA
20	Potassium chloride, Calcium gluconate	B01: 13, 278-283	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/calcium-gluconate-235704682/235704682	NA
21	Oral Rehydration Salt (ORS),	B01: 13, 283	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/oral-rehydration-salt-233913901/233913901	NA
22	Physiological acid base balance	B01: 13, 283-287	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/physiological-acid-base-balance-250774126/250774126	NA
23	Dental products: Dentifrices, role of fluoride in the treatment of dental caries	B01: 10, 236-242	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/role-of-fluoride-in-dental-productspptx/254927252	NA
24	Desensitizing agents, Calcium carbonate, Sodium fluoride, and Zinc eugenol cement.	B01: 10, 242-244	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/dental-products-2/250774187	NA
25	Gastrointestinal agents: Acidifiers: Ammonium chloride* and Dil. HCl;	B01: 08, 152-154	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/dental-products-2/250774187	NA
26	Antacid: Ideal properties of antacids	B01: 08, 155-156	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/antacids-29187678/29187678	NA
27	combinations of antacids, Sodium Bicarbonate*,	B01: 08, 172-177	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/antacids-pharmaceutical-inorganic-chemistry/274554316	NA
28	Aluminum hydroxide gel	B01: 08, 156-161	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/aluminium-hydroxide/213538633	NA
29	Magnesium hydroxide mixture	B01: 08, 164-170	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/preparation-of-magnesium-hydroxide-mixture-by-mukesh-shukla-pptx/284119023	NA
30-31	Cathartics: Magnesium sulphate, Sodium orthophosphate, Kaolin and Bentonite	B01: 08, 177-185	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/cathartics/250774740	NA

32	Antimicrobials: Mechanism, classification	B01: 09, 198-203	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/mechanism-of-action-of-antimicrobial-agents/115953659	NA
33	Potassium permanganate, Boric acid, Hydrogen peroxide*,	B01: 93, 203-205	Lectur e, revie wing	Lecture, Active learning,	https://www.slideshare.net/slideshow/antimicrobial-agent-245308298/245308298	NA
34	Chlorinated lime*, Iodine and its preparations	B01: 09, 31, 205-214	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/antimicrobial-agent-245308298/245308298	NA
35	Miscellaneous compounds	B01: 19, 370	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/antimicrobial-agent-245308298/245308298	NA
32	Expectorants	B01: 19, 255-259	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/expectorant-and-antitussives/217593523	NA
33, 34	Potassium iodide, Ammonium chloride*.	B01: 19, 259-265	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/expectorant-and-antitussives/217593523	NA
35, 36	Emetics: Copper sulphate*, Sodium potassium tartarate	B01: 12, 255-263	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unit-ivmiscellaneous-compounds-expectorants-emetics-haematinicsposion-and-antidote-and-astringentspptx/264008617	NA
37, 38	Haematinics: Ferrous sulphate*, Ferrous gluconate	B01: 14, 298-312	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unit-ivmiscellaneous-compounds-expectorants-emetics-haematinicsposion-and-antidote-and-astringentspptx/264008617	NA
39	Poison and Antidote: Sodium thiosulphate*, Activated charcoal, Sodium nitrite333	B01: 18, 365-369	Lectur e, revie wing	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unit-ivmiscellaneous-compounds-expectorants-emetics-haematinicsposion-and-antidote-and-astringentspptx/264008617	NA
40	Astringents: Zinc Sulphate, Potash Alum	B01: 09, 187-198	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unit-ivmiscellaneous-compounds-expectorants-emetics-haematinicsposion-and-antidote-and-astringentspptx/264008617	NA
41	Radiopharmaceuticals : Radio activity, Measurement of radioactivity,	B01, 17, 340-343	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unitv-radiopharmaceuticalpptx/263966670	NA
42	Measurement of radioactivity,	B01, 17, 343-348	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unitv-radiopharmaceuticalpptx/263966670	NA
43	Properties of α , β , γ radiations	B01, 17, 340-341	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unitv-radiopharmaceuticalpptx/263966670	NA
44	Half-life, radio isotopes	B01, 17, 342-343	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-	NA

					unitv-radiopharmaceuticalpptx/263966670	
45	study of radio isotopes - Sodium iodide I131,	B01, 17, 353-363	Lectur e	Lecture, Active learning,	https://www.slideshare.net/slideshow/pharmaceutical-inorganic-chemistry-unitv-radiopharmaceuticalpptx/263966670	NA

Teacher in-charge

Assistant Dean

Dean