

Institute/School Name	Chitkara College of Pharmacy		
Department Name	Pharmacy		
Programme Name	B. Pharmacy		
Course Name	Pharmacology - II	Session	July-Dec 25
Course Code	BP503T	Semester/Batch	V /2023
L-T (Per Week)	3-1	Course Credits	4
Pre-requisite	Anatomy, Physiology, Pathophysiology and Pharmacology - I	NHEQF Level	5.5
Course Coordinator	Dr. Sandeep Kumar		
SDG	SDG 3 – Good Health & Well-being		

Objectives of the Course: Upon completion of this course the student should be able to Understand the mechanism of drug action on various body systems including cardiovascular, renal, endocrine, and autacoids, with emphasis on their mechanisms, therapeutic uses, adverse effects, and contraindications. Develop understanding of receptor pharmacology and bioassay principles, enabling students to appreciate drug–receptor interactions and methods of evaluating drug potency and efficacy. Integrate pharmacological knowledge with related biomedical and clinical sciences, fostering the ability to correlate basic mechanisms with therapeutic applications in disease management. Introduce principles of toxicology and treatment of poisoning, equipping students with knowledge of antidotes and management strategies in toxicological emergencies.

Course Outcomes (COs)

Students should be able to:

S. No	Course Outcomes (Cos)	Program Outcomes	NHEQF Level Descriptor	No. of Lectures
CO01	Understand the mechanism of drug action and its relevance in the treatment of different diseases.	PO1, PO6, PO9, PO11	Q1, Q2, Q3	10
CO02	Comprehend the principles of toxicology and the treatment of various poisonings.	PO1, PO2, PO6, PO11	Q1, Q2, Q3	8
CO03	Locate and isolate different organs/tissues from laboratory animals used in pharmacological experiments.	PO1, PO6	Q2, Q3	7
CO04	Study various receptor actions using isolated tissue preparations.	PO1, PO8, PO9	Q1, Q2, Q3	7
CO05	Correlate pharmacology with related medical sciences.	PO1, PO5, PO6, PO9	Q1, Q3, Q4	6
CO06	Learn various methods of toxicity studies.	PO1, PO6, PO9, PO11	Q1, Q2, Q3, Q6	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					3			2		3	Summative/ Formative
CO02	3	3				3			2		3	Summative/ Formative
CO03	3					3						Summative/ Formative
CO04	3							3	2			Summative/ Formative
CO05	3				2				2			Summative/ Formative
CO06	3					3			2			Summative/ Formative

3=High, 2=Medium, 1=Low

Recommended Books:

- **B01.** Rang, H. P., Dale, M. M., Flower, R. J., Henderson, G., Ritter, J. M., & Rang, H. P. (2024). Rang and Dale's Pharmacology (10th ed.). Elsevier Health Sciences. ISBN: 9780702084132
- **B02.** Brunton, L. L., Hilal-Dandan, R., & Knollmann, B. C. (2023). Goodman & Gilman's The Pharmacological Basis of Therapeutics (14th ed.). McGraw-Hill Education. ISBN: 9781264258075
- **B03.** Tripathi, K. D. (2023). Essentials of Medical Pharmacology (9th ed.). Jaypee Brothers Medical Publishers. ISBN: 9789354659320
- **B04.** Satoskar, R. S., Rege, N. N., & Bhandarkar, S. D. (2021). Pharmacology and Pharmacotherapeutics (26th ed.). Elsevier India. ISBN: 9788131256530
- **B05.** Sharma, H. L., & Sharma, K. K. (2018). Principles of Pharmacology (3rd ed.). Paras Medical Publisher. ISBN: 9788181913210

Other readings and relevant websites:

Serial No	Link of Journals, Magazines, websites and Research Papers
1	<i>Indian Journal of Pharmacology</i> – https://www.ijp-online.com
2	<i>British Journal of Pharmacology</i> – https://bpspubs.onlinelibrary.wiley.com/journal/14765381
3	<i>Journal of Pharmacology & Experimental Therapeutics (JPET)</i> – https://jpet.aspetjournals.org
4	PubMed (US National Library of Medicine, NIH) – https://pubmed.ncbi.nlm.nih.gov
5	NPTEL – Pharmacology courses - https://nptel.ac.in/courses/121106004

6	SWAYAM MOOC – <i>Pharmacology for Health Sciences</i> – https://swayam.gov.in
---	---

Lecture Plan

Lecture No.	Topic	Book No, Ch no	TLM	ALM	Web References	Audio- video
1	Pituitary hormones – analogues & inhibitors	B01 Ch.30; B03 Ch.48	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=Uzg0LKPcaGQ
2	Thyroid hormones – analogues & inhibitors	B01 Ch.31; B03 Ch.49	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=AQHYiZ0kMII
3	Calcium regulators (PTH, Calcitonin, Vit-D)	B01 Ch.32; B03 Ch.50	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=JYQL7JEsF_4
4 5	Insulin & Glucagon	B01 Ch.33; B03 Ch.51	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=IY699mzi7K4
6	Oral hypoglycemics	B01 Ch.33; B03 Ch.51	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=IY699mzi7K4
7	ACTH	B01 Ch.34; B03 Ch.52	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=FOxJIDCyPY
8	Corticosteroids	B01 Ch.35; B03 Ch.52	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=-6MFCy_dFew
9	Androgens & anabolic steroids	B01 Ch.36; B03 Ch.53	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=VZIR2NczwB8
10	Estrogens	B01 Ch.37; B03 Ch.54	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=hW4XpW7LfIM
11	Progesterone & contraceptives	B01 Ch.37; B03 Ch.54	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=TfN9-SamIss&t=334s
12	Drugs acting on uterus – Oxytocics	B01 Ch.38; B03 Ch.55	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=a2OmbUFnL1g
13	Drugs acting on uterus – Tocolytics	B01 Ch.38; B03 Ch.55	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=a2OmbUFnL1g
14	Bioassay – Principles & types	B03 Ch.56; B04 Appendix	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=OT4j9PRw_OE
15	Bioassay examples: Insulin, Oxytocin, Vasopressin, ACTH, d-tubocurarine, Digitalis, Histamine, 5-HT	B03 Ch.56–57	Lecture + Review	Group Discussion	-	https://www.youtube.com/watch?v=OT4j9PRw_OE

16	Drugs used in shock – overview, vasopressors	B02 Ch.29; B03 Ch.40	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=u4OcRS99MWE
17	Drugs for shock – inotropes, vasodilators	B02 Ch.29	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=u4OcRS99MWE
18	Hematinics – Iron, B12, Folate	B03 Ch.39	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=EM_kdruxY4
19	Coagulants & Anticoagulants	B01 Ch.20; B03 Ch.40	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=3GN5L2ugfvk&t=12s
20	Antiplatelets	B02 Ch.55; B03 Ch.41	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=aSRI6BGXX70
21	Fibrinolytics	B02 Ch.56; B03 Ch.41	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=YyS9c13LM14&t=16s
22	Plasma volume expanders	B01 Ch.20; B03 Ch.42	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=qbjCHAO1mFA
23 24	Diuretics (Loop, Thiazide, K-sparing, CA inhibitors)	B01 Ch.23; B03 Ch.42	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=NyS2wjR7ezA&t=293s
25	Antidiuretics (ADH analogues)	B01 Ch.23; B03 Ch.42	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=HL89x3BTnmY
26	Hemodynamics & electrophysiology of heart	B01 Ch.13; B03 Ch.32	Lecture	Group Discussion	-	https://www.youtube.com/results?search_query=Hemodynamics+%26+electrophysiology+of+heart
27 28	Drugs for CHF	B01 Ch.14; B03 Ch.33	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=tRWHm33ZXNw&t=7s
29 30	Antihypertensives – overview & agents	B01 Ch.15; B03 Ch.34	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=1SsYduKxE0Q
31 32	Antianginal drugs	B01 Ch.16; B03 Ch.35	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=kVGbMnSaI_g
33 34	Antiarrhythmics	B01 Ch.17; B03 Ch.36	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=VgqICq8ZZk
35	Antihyperlipidemias	B01 Ch.19; B03 Ch.38	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=t5BODWgysAY
36	Intro to autacoids & classification	B01 Ch.25; B03 Ch.43	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=7

				n		4P2I74a_Iw
37	Histamine & antagonists	B01 Ch.25; B03 Ch.44	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=D5PHANcdA_E&t=120s
38	5-HT & antagonists	B01 Ch.25; B03 Ch.44	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=rBhjj-np8Do
39	Prostaglandins & Thromboxanes	B01 Ch.26; B03 Ch.45	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=Wz8OwDVvyJ0
40	Leukotrienes	B01 Ch.26; B03 Ch.45	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=2Mzr5eos2EE
41	Angiotensin, Bradykinin, Substance P	B01 Ch.27; B03 Ch.45	Lecture	Group Discussion	-	https://www.youtube.com/shorts/pk3RP7ZYc8M
42 43	NSAIDs	B01 Ch.28; B03 Ch.46	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=qhiMmNZjHRg
44	Anti-gout drugs	B01 Ch.28; B03 Ch.46	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=8uNV3_La2Vo
45	Antirheumatic drugs (DMARDs, biologics)	B01 Ch.29; B03 Ch.47	Lecture	Group Discussion	-	https://www.youtube.com/watch?v=cS_WQ62cVdSc

Teacher in-charge

Assistant Dean

Dean