

Department of Anesthesiology and Critical Care
Faculty of Health Sciences
University of Stellenbosch

Schedule: Pharmacology for MMed Part 1

Course of study: 2012

- Rang Dale & Ritter (R+D): Pharmacology: **7th edition**;
- C.J. Hull: Pharmacokinetics for Anesthesia: Ch 1-10;
- Miller: Anesthesia: **7th edition**. (ISBN No: 978-0-443-06959-8);
- Opie: Drugs for the Heart: **7th edition**;
- Goodman and Gilman's (G+G): The Pharmacological Basis of Therapeutics **12th edition**;
- Evers and Maze (E&M): Anesthetic Pharmacology: Physiologic Principles and Clinical Practice:
 - **1st edition**-chapters 23,25,28,30,35,37,38, 43, 53;
 - **2nd edition**-chapters 13, 29, 45,47,48,49, 50, 55, 58, 59, 60, 65, 66, 67,
- Notes on Pharmacokinetics by Prof J Coetzee;
- Notes on Haematology and Coagulation by M. Gildenhuys;
- Notes on Pharmacokinetics by S.Etoe

Datum	Topic/s	Essential References	Additional References	Tutor
9/1	Neutraceuticals,Sport, Pregnancy,Contrast media	Neutraceuticals Anesthesia 2002, 57, pgs. 889-899; Contrast Media SAMF; Obstetric Pharmacology E&M 2 nd ed. ch 58	Herbal Remedies pose Health Threats-Alternative Medicine -Society for Advancement of Medicine Feb 2002; Pharmacology of Nonionic Roentgen Contrast Media- Wein Klin Wochenschr 1986; Prophylaxis of Iodinated Contrast Media-Induced Nephropathy Investigative Radiology- March 2004 vol 39-Issue 3-pp 155-170; Medications in pregnancy and Lactation Parts I and 2-Amer College of Ob & Gyne Vol 113, No 1, Jan 2009;	J Burke
16/1	Bio-warfare; IV fluids; Lifestyle drugs	Biological and chemical hazards/warfare--BJA 2002. 89 (2) 306-24; Miller ch.74;Medical Aspects of biological toxins; Anaesthesiology Clinics of N. America Sept 2004; 22: issue 3 ?pg; Botulinum Toxin Action-Annual Review Pharmacol toxicol. 2004: 44: 167-9; IV fluids and colloids-E&M 2 nd ed. ch 50; Fluid therapy-article by I. Joubert, UCT;Lifestyle drugs R&D ch. 58	Rheumatological prescribing in Athletes-a review of Anti-Doping guidelines- Rheumatology,2004;43;1473-1475; Hydroxyethyl starches-Anesthesiology V 111, no 1, Jul 2009; Pharmacological Aspects of blood conservation in anesthesia- Specialist Medicine Feb 1995	J. Burke
23/1	Dynamics of drug action Occupancy, dose-response curves agonists, antagonists; Law of Mass Action	R&D ch. 2. ; Hull ch. 7	Notes: basic concepts	S.Etoe
30/1	Kinetics – basic concepts: Exponentials, rate constant, time	Hull ch. 1, ch. 2, ch. 4, 5, 6; Notes Prof J Coetzee; R&D ch. 8	Notes: basic concepts	S. Etoe

	constant, half time/life; Vd, <i>cl</i> , $t_{1/2}$, Henderson Hasselbalch, absorption & distribution			
6/2	Drug metabolism, Clearance and indices of drug elimination; Michaelis Menten, 1 st and zero order, protein binding,	Notes: Prof J. Coetzee; Hull ch 4, pgs 45-50; Hull ch.8; R&D ch. 9	Notes: basic concepts	S.Etoe
13/2	Receptors—how drugs work; <i>Drug interactions idiosyncratic reactions; Adverse effects of drugs.</i> ; Bioassay and Clinical Trials; Stereoisomers	R& D ch 3; R & D ch. 56; R & D ch. 57; R & D ch. 7	Idiosyncratic Drug Reactions:... Current understanding- Annual Review of Pharmacology and Toxicology, Vol 47; 513-539, Feb 2007;Extra refs (e.g. Wikipedia is ok) on stereoisomers	A. Rocher
20/2	CONGRESS			
27/2	Intravenous kinetics and compartment models	R&D ch. 10; Notes: Prof J Coetzee	Notes-basic concepts	S.Etoe
5/3	Kinetic variability: age,heredity, gender, pregnancy, liver and renal disease, cardiac failure, obesity	Hull ch. 9 & 10	Notes-kinetics variability	M.L. Sprenkels
12/3	Autonomic nervous system; Chemical mediators in the ANS; Cholinergic transmission in ANS;	R&D ch. 12; R&D ch. 13;	Potential adverse effects chronic organophos exposure-Environmental Health Perspectives June 1999; Vol 107: Suppl 3	K. De la Porte
19/3	ANS continued... Noradrenergic transmission in ANS; + Nicotine in ANS; Pharmacology of the eye	R&D ch. 14; G & G ch. 64		K. De la Porte
26/3	Inhalational Anaesthesia.	Miller ch 20, (21, 22, 23), 24; Evers and Maze 1 st ed ch. 23; Xenon: Anesthesia 1999; 54: 335-346	Miller 7 th edition 4 chapters on the ; Drugs (ch.20); Metabolism and Toxicity (ch.24);CVS (ch.23); Pulmonary aspects (ch. 22)	WvdMerwe/ Etoe
2/4	Neuromuscular blockers.	Miller ch. 14, 29 Anaesthesiology 1992;76:822-843	Anaesthesia 2004,59; 364-373-(review article on dantrolene)	WvdMerwe/ Etoe

16/4	IV Anesthetic Agents	Miller ch. 26	Anesthesiology 2005; 103, 860-76-propofol formulation; Intensive Care Medicine 2003; 29; 1417-1425--propofol infusion syndrome	S.Etoe
23/4	Opioids and chronic pain therapy	R&D ch. 41; Miller ch. 27		WvdMerwe/ Etoe
7/5	Haemostasis & coagulation. Part One	R&D ch. 24; Opie ch. 9; Evers and Maze 1 st ed ch. 53	BJA 2004; 93 (6): 842-58-(perioperative haemostatic agents)	C. Cilliers
14/5	Haemostasis & coagulation Part Two	Use same references as above		C. Cilliers
21/5	Local anaesthesia.	R&D ch 42; Evers and Maze 1 st ed ch. 30; ASA 1992 no 234 (cocaine); Miller ch. 30	SA Journal Anaesthesia & Analgesia Sept. 2001, pg 29-34-tumescent lipo-suction; Acad Emerg Med Sept 2009; vol 16, No 9 pg 815-821-Intravenous lipid emulsion antidote for LA toxicity	J.Burke/ A.Malherbe
28/5	Diuretics. & kidney; renal protection; N-acetyl cysteine	R&D ch 28; Opie ch 4; N-acetylcysteine ref; E & M 2 nd ed ch. 49; pg 791+ (renal protection)		J. Burke/A Malherbe
4/6	CVS Intro Part I; <i>i)The heart + the vascular system; ii)Nitric Oxide; iii)Sildenafil.</i>	R&D ch. 21 and 22; E& M 2 nd ed. Ch 65 (vasc tone); Cardiovasc Research 2009; 84: 24-32; R&D ch. 20; J Cardioth & Vasc Anesth 2006; vol20,No 5, pg722-735; Current Medicinal Chemistry, 2006,13, 3155-3164; Circulation, 2004; 109: III50-57	Nat Rev Drug Discov 2006 (Sept); 5 (9); 755-768 (NO-independent stim of guanylate cyclase); J Clin Anesthesia Nov 2008; vol 20: Issue 7 (perioperative discontinuation of PDEI V's)	W. Schwabe
20/6	EXAMS			

25/6	CVS Intro part II; iv)Purines & adenosine; v)Obesity; vi) cardiac naturetic peptides; vii)Vasopressin; viii)Erythropoietin	R&D ch. 16; Opie pg 263-4; R&D ch. 31; R&D pg 252; R & D pg 399-400; Opie ch. 6: pg 170-72; R & D pg 712 & 314; Clin Science 2002; 103: 275-282	European J Anaesth 1998; 15: 133-139 (por 8)	P. Marwick
2/7	CVS Intro part III; ix)Lipid-lowering and anti-atherosclerosis treatment;	Opie ch. 10; R & D ch. 23; Seminars in Cardioth & Vasc Anesth		

	x)Metabolic syndrome; xi)Magnesium	14 (4), 283-290; SAJAA 2008, 14 (1) Jan/ Feb pg 7-11; BJA 2008; 3: 288-298; Opie ch. 11; J Int Med Sept 2005; 258: Issue 3; pg 250-256; Therapeutic advances Cardiovasc Disease 2007; 1(1); 7-26; Br J Anaesth 83 (2): 302; 1999; Anesth and Analg 1992; 74: 129-136; Anesthesiology: 1998; 89; 222-40		D. Müller
9/7	Beta blockers. + calcium blockers	Opie ch. 1; Opie ch. 3	Current Opinion in Anesthesiology Vol 24 (1) Feb 2011, pg 104-110	S.Etoe
16/7	A.C.E.I.S, ARBs	Opie ch. 5; Anaes & Analg 1999; 89: 1143-1155.		S.Etoe
23/7	Heart-failure; Systolic/diastolic dysfunction, digitalis; Inotropes; PDEI's;Pulmonary hypertension and RHF	Opie ch. 6; Evers and Maze 1 st ed ch. 37; Evers & Maze 2 nd ed ch. 48; Current Opinion Anesthesiology Feb 2010; 23(1): 49-56	Heart Views Nov 2007; Vol 8, No 3: pg 90-99 (review Pulm hypertension)	S.Etoe
30/7	Coronary artery disease, nitrates, nitroprusside, cyanide; <i>Antihypertensives hypertensive crises; alpha agonists.</i>	Opie ch. 2; R & D pg 259-63,Evers and Maze 1 st ed ch. 38; Opie pg 198-200; Anaes & Analg 1995; 8; 152-162; G&G 11 th ed 797-799, (SNP);G&G 11 th ed 1892-1893.(cyanide); E & M 2 nd ed ch. 66 (cardiac protection); Opie pg 226-229; G&G 12 th ed ch. 27,pg 765-783; Evers and Maze 1 st ed ch. 28, (alpha agonists); E&M 2 nd ed ch. 45 and 65 (vasodilators and control of vascular tone)	J Clin Anesthesia Vol 21, issue 3, May 2009; Seminars Cardiothor Vasc Anesth 2010; 14: 54-57 (myocardial preconditioning); Crit Care Med 1996; 24: No 2; (hypertensive patients with intracranial pathology)	S.Etoe
6/8	Anti-arrhythmic drugs, including ivabradine	R & D pg 254-258; Opie ch 8; Evers and Maze 1 st ed ch. 35	J Clin Pract Feb 2006; 60,2, 222-228	W vd Merwe
13/8	Respiratory pharmacology; <i>Pulmonary hypertension; Drugs inducing lung</i>	R&D ch. 2; Miller ch. 37, pgs 1181-1190; R&D ch. 11 BJA 2000;	Anesth Analg 1995;80;591-9; Cleveland Clinic J of Medicine Vol 68 No 9 2001; N	M L Sprenkels

	<i>disease; Pharmacogenetics.</i>	Vol 85: NO 1, pg 143-153 (porphyria)	Eng J Med 2004; 351: 1655-65-(pulm hypt)	
20/8	Antimicrobials; anti-retrovirals; chemotherapy	E & M 2 nd ed ch. 59; E&M 2 nd ed ch. 60, pg 995 (chemotherapy)		P le Roux
27/8	i) Allergy, inflammation, carcinoid, serotonin, ergot, bradykinin, platelet-activating factor, prostaglandins, cytokines; ii) <i>Anti-inflammatory drugs, aspirin and paracetamol, Anti-(H1) histamines, Immunosuppressants; Gout.</i>	R&D ch. 15; R&D ch. 17 from pg 212-220; Anaesthesia 2000; 55: 442-449; Arch Intern Med Feb 1990;150:268-270; R & D ch. 26; G&G 12 th ed pg 979-984; (aspirin and paracetamol toxicity)		P le Roux
3/9	Neurodevelopment Neurotransmission and drug action in central nervous system; Signal transduction; Receptors as targets; Calcium channels; Psychiatric genetics	R&D ch. 37 & 38		S.Etoe
10/9	Neurodegenerative disorders, Dementias; Alzheimers disease, Parkinson's disease; Neuroprotection; Epilepsy, centrally-acting muscle relaxants.	R&D ch. 39; R&D ch. 44		S.Etoe
17/9	Sleep disorders, anxiety and stress. Alcohol, and methanol.	R&D ch. 43; Evers and Maze 1 st ed ch. 25; R & D 602-607	E&M 2 nd ed. ch. 29 (more on benzodiazepines); E&M 2 nd ed. Ch. 13 (sleep and unconsciousness)	A. Rocher
1/10	Antipsychotic drugs, delirium, dementia, neuroleptic malignant syndrome, anticholinergic syndrome.	R&D ch. 45; G&G 12 th ed; ch. 16 pg 436-443		S. Etoe
8/10	Drugs used in affective mood disorders; Lithium; Serotonin syndrome	R&D ch. 46; G&G 12 th ed ch. Pg 410-413		S.Etoe
15/10	Drug abuse, dependence, central nervous system stimulants, psychotomimetics, nicotine, alcohol cannabis.	R&D ch. 48; BJA (SA) Jan 1998 Vol 4 Editorial II pg 3-4; R & D ch. 18	E&M 2 nd ed. Ch 67- Management of patients with alcohol or drug abuse	S. Etoe
22/10	Endocrine – thyroid, pancreas, adrenal; vasopressin/ADH; oxytocin tocolytics	R & D ch. 30; ch. 32 ; ch. 33 pg 414-415; ch. 34;	E&M 2 nd ed. ch. 55 Insulin and antihyperglycemic drugs	S. Etoe

	androgens, estrogen: estrogen-modifying agents -			
29/10	Gastro-intestinal system.	R&D ch 29		M L Sprenkels
7- 14/11	EXAMS			