

Date	Hospital	Subject	Description
2/10/12	RGH	Pharm C Ion channels Receptors Transduction	7-9 Voltage-gated ion channels; membrane-bound transport pumps. Sodium, potassium and calcium channels as targets for drug action Receptors as proteins; ion channels; transmembrane transduction and intermediate messenger systems; intracellular/nuclear receptors. Receptor regulation and tachyphylaxis Transduction systems as receptors: G-protein coupled receptors [GPCRs] and non-GPCR systems.
		Physiol K CO Fluid/failure/shock Endothelium Periph/special circ	42-43 & 46-48 Control of cardiac output [including Starling relationship] Fluid challenge and heart failure, types of shock. Peripheral circulation: capillaries, vascular endothelium and arteriolar smooth muscle Functions of endothelium
		Physiol X Energy Nutrition	84-85 Energy homeostasis. Energy balance and nutritional status. Body mass/composition: body mass index, body fat estimation. Functional measurements: e.g. handgrip strength, work/exercise capacity. Biochemical measurements. Immune function. Principles of nutrition: carbohydrates, fats, proteins, vitamins and minerals. Energy requirements/expenditure and measurement.
		Physics J Hazards Electrocution Equip safety Circuit breakers	43-46 Electrical hazards: causes and prevention Electrocution: including microshock, earth faults, leakage Electrical equipment safety: domestic and medical, classification/types of equipment, symbols Circuit breakers, fuses Transformers, inductance
25/10/12	UHW	Pharm J Volatiles, MAC, coefficients IV Anaesthetics GA Action	27-29 Volatile and gaseous anaesthetic agents: Structure of available agents. MAC. Clinical effects: CNS [including ICP], CVS, RS. Unwanted effects of individual agents. MH susceptibility; hepatitis risks. Factors affecting onset and offset time. Oil/gas partition coefficient. Intravenous anaesthetic agents: Chemical classes. Properties of an ideal induction agent. Adverse effects on CNS [including effects on ICP], CVS, RS; pharmacokinetics including metabolism Mechanisms of general anaesthetic action.
		Physiol V Funct Anatomy Liver Metabolism & digest.	78-79 Functional anatomy and blood supply, immunological functions Metabolic and digestive functions.
		Physics G Lung Vols Density/viscosity Flow Venturi	27-32 Measurement of lung volumes and diffusion Density and viscosity of gases. Laminar and turbulent flow: Hagen-Poiseuille equation, Reynold's number, examples including helium Measurement of volume and flow in gases and liquids, including pneumotachograph and other respirometers Bernoulli principle Venturi effect and entrainment devices.

		Stats	1-10 Recalls the simple aspects of study design Explains: the outcomes measures and the uncertainty in their definition, the basis of meta-analysis and evidence based medicine. Recalls the types of data and their representation. Explains the normal distribution as an example of parametric distribution, indices of central tendency and variability. Recalls simple probability theory and the relationship to confidence values Explains the null hypothesis Explains the choices for simple statistical tests for different types of data Recalls type I and type II errors.
6/11/12	Swansea	Pharm N CVS Drugs	43-47 Cardiovascular system: general: drug effects on the heart [inotropy and chronotropy] and on the circulation: arterial and venous effects; systemic and pulmonary effects. Aspirin and paracetamol. Comparison of structures; indications and contraindications; mechanisms of action. Bioavailability; metabolism; toxicity Non-steroidal anti-inflammatory analgesics: Classification. Mechanism of action. Clinical effects and uses; unwanted effects, contraindications. Inotropes and pressors: Classification; site of action. Synthetic inotropes compared with adrenaline. Hypotensive agents: Classes of drugs to produce acute hypotension in theatre. Therapeutic antihypertensive agents: classification according to mechanism of action. Adverse effects of drugs in each class.
		Physiol AA Hormones Control Mechanisms Pit & Adrenocortical Hormones	90-93 Hormones; types, receptors, hierarchy, extracellular signaling Mechanisms of hormonal control; feedback mechanisms, effects on membrane and intracellular receptors Hypothalamic and pituitary function Adrenocortical hormones.
		Physiol C pH, Acids Acid-Base balance Anion gap	7-8 Definition of pH. Strong and weak acids. Acid base balance. Includes buffers, Henderson-Hasselbalch equation and anion gap.
		Physics E Gases, Critical Temp Vapour & Pressure	19-22 Physics of gases. Gas Laws: kinetic theory of gases, Boyles, Henry's, Dalton, Charles, Gay-Lussac Critical temperature, critical pressure Physics of vapours Pressure: absolute and relative pressure; gauge pressure.
21/11/12	NHH	Pharm A Chemistry Isomers	1-4 Organic chemistry: drugs as organic molecules: types of intermolecular bonds; interactions between molecules; organic compared with inorganic compounds; bond strength; important atomic constituents: C, N, O, P, S and halides. Organic chemistry: ionization of molecules: type of groups that ionize: amides, hydroxyl, carboxyl. Oxidation and reduction. Permanently charged [quaternary ammonium] drugs. Drug chemistry: solubility, partition coefficients and movement of drugs through membranes: Lipid solubility; influence of pKa and pH; partition coefficients. Passive and active transport mechanisms.

		Physiol D Ions Metabolism Enzymes	9-11 Ions e.g. Na^+ , K^+ , Ca^{++} , Mg^{++} , Cl^- , HCO^- Cellular metabolism; aerobic vs anaerobic. Enzymes
		Physiol AB Medulla: AD & NA Pancreas & Thyroid	94-96 Adrenal medulla; adrenaline and noradrenaline Pancreas; insulin, glucagons and exocrine function Thyroid and parathyroid hormones and calcium homeostasis.
		Physics F Manufacture/Storage Cylinders/Pipes Suction/Scavaging	23-26 Manufacture and storage of gases and vapours, safety. Cylinders and pipelines, Bourdon gauge. Suction devices. Scavenging devices
11/12/12	POW	Pharm B Mechanism of drug action	5-6 Mechanisms of drug action: physicochemical; pharmacodynamic; pharmacokinetic: drug-receptor interactions; dose- response and log[dose]-response curves; agonists, partial agonists, antagonists. Reversible and irreversible antagonism. Potency and efficacy. Non-specific drug actions: Physicochemical mechanisms: e.g. adsorption; chelation; neutralization.
		Pharm H Pharmacokinetic modelling, half-life TCI	22-24 Pharmacokinetic modelling: types of models available: one, two and three-compartment models; non-compartmental; physiological. Pharmacokinetic parameters: volume of distribution, half-life and time constant, clearance Context-sensitive half-time: comparison of drugs e.g. propofol, fentanyl and remifentanyl. Target-controlled infusions [TCI] TCI in practice: accuracy, applicability, cost. Variations due to patient differences: predictable and unpredictable.
		Physiol I Act pot/NMJ, myopathies/contractures Muscle types	29-37 Action potential generation and its transmission Neuromuscular junction and transmission, motor end-plate Disturbances of neuromuscular transmission Myopathies – congenital and acquired Muscle contracture – malignant hyperthermia, myoclonus, burns Muscle types; skeletal, smooth, cardiac Skeletal muscle excitation-contraction coupling Smooth muscle contraction: sphincters Motor unit concept.
		Physiol F Blood/RBC/Anaemia/Poly	17-20 Blood: physical properties, components, functions Red blood cells: production and turnover, haematinics, haemoglobin and its variants including abnormal haemoglobins eg thalassaemia, HbS Anaemia: acute and chronic adaptations – Iron absorption, transportation, metabolism Polycythaemia: causes and implications.
		Physics A Maths/Functions/Logs Int/Diff Measurement	1-5 Mathematical concepts: relationships and graphs Exponential functions including wash-in, wash-out, tear-away Logarithms Area under the curve [integration] and rate of change [differentiation]. Basic measurement concepts relevant to understanding of monitoring in anaesthesia: linearity, drift, hysteresis, signal to noise ratio, static and dynamic response.

16/1/13	WWG/H*West	Pharm D Nuclear receptors Enzyme targets	10-12 Nuclear receptors: Intracellular hormone receptors. e.g. cytoplasmic receptors for steroids; corticosteroids vs. mineralocorticoid receptors Enzymes as drug targets: Michaelis-Menten kinetics. Direct and allosteric mechanisms. e.g. acetylcholinesterase; cyclo-oxygenase; phosphodiesterase Anticholinesterases: Classification of drugs that inhibit acetylcholinesterase and plasma cholinesterase including organophosphates.
		Physiol B Cells, organelles Genes/expression Junctions/receptors Protective mechanisms	3-6 Cells; components and organelles Function of cells; genes and their expression Cell membrane characteristics; cell junctions, receptors Protective mechanisms of the body.
		Physiol E Body fluids	12-16 Capillary dynamics and interstitial fluid; osmosis, filtration and convection Osmolarity: osmolality, partition of fluids across membranes, tonicity Lymphatic system Special fluids especially cerebrospinal fluid: also pleural, pericardial and peritoneal fluids Active cellular transport mechanisms.
		Physics D Humidity Patient warming equip. Colligative properties	14-15 & 17-18 Patient warming systems: principles. Warming equipment for intravenous fluids: principles. Humidity, absolute and relative; including measurement Colligative properties: osmolarity, osmolality, osmometry, diffusion.
28/1/13	PCH	Pharm G AB's/Administration Bioavail. Elim. Hoffmann	18-21 Administration and absorption: routes of administration; first-pass metabolism and bioavailability. Selection of appropriate route. Drug delivery systems: e.g. sustained release, enteric coated, transdermal patch and ionophoretic systems. Oral administration: Time-course for systemic appearance; factors e.g. pKa, lipid solubility, active transport. Bioavailability of drugs given orally and its measurement Drug elimination from plasma. Mechanisms: distribution; metabolism; excretion: exhalation; renal; biliary; sweat; breast milk. Factors affecting e.g.: pathological state: renal and hepatic failure; age, including extremes of age; gender; drug interactions. Active and inactive metabolites; pro-drugs. Enzyme induction and inhibition. Non-enzymatic drug elimination: Hofmann degradation.
		Physiol Q Neurology	65-67 Neuronal structure and function. Resting membrane potential, action potentials, conduction, synaptic mechanisms, actions of neurotransmitters. The brain: functional divisions.
		Physiol R Brain stem/ICP/Posture	68-70 Brain stem; organization, interconnections. Intracranial pressure: cerebrospinal fluid, blood flow. Maintenance of posture.
		Physics B Solutions/doses SI Units Mechanics	6-9 Electrolyte solutions [also drug doses]: conversion between units e.g. molar, mg/ml, %. SI Units: fundamental units and derived units. Other non SI units relevant to anaesthesia: including mmHg, bar, atmospheres, cm H ₂ O, psi. Simple mechanics: mass, force, work, energy, power.

20/2/13	R Glam	Pharm E Side Effects Interactions	13-16 Predictable side effects of drugs: non-selective actions of drugs; action at multiple receptors; multiple anatomical locations; predictable enzyme induction-inhibition. Idiosyncratic side effects of drugs: e.g. blood and bone-marrow dyscrasias; pulmonary fibrosis; anti-platelet effects. Anaphylactic and anaphylactoid reactions: comparison; treatment; identification of responsible drug; risks with polypharmacy. Tachyphylaxis and tolerance: Examples of drugs demonstrating tachyphylaxis; proposed mechanisms. Opioid dependence and tolerance. Drug interactions: Types of interaction: synergism, additivity, antagonism; isobolograms. Classification of mechanisms of drug.
		Physiol G Blood groups Transfusion reactions Haemostasis/coag	21-23 Blood groups: ABO, Rhesus, others. Transfusion reactions; rhesus incompatibility. Haemostasis and coagulation, fibrinolysis – including abnormalities, congenital and acquired.
		Physics C Heat/Latent heat Tem & measurement Thermodynamics	10-13 & 16 Heat: including temperature, absolute zero. Heat transfer and loss: conduction, convection, radiation, evaporation. Temperature measurement: including Hg, alcohol, infrared, thermistor, thermocouple, Bourdon gauge, liquid crystal. Anatomical sites used for measurement. Latent heats, triple point of water. Laws of thermodynamics; mechanical equivalent of heat.
		Physics H Vap Pressure/SVP Vapourisers Surface tension	33-36 Vapour pressure: saturated vapour pressure. Vaporisation: process of vaporization. Vaporisers: principles, including plenum and draw-over, temperature compensation, concentration. Principles of surface tension.
5/3/13	RGH	Pharm L Muscle relaxants	36-39 Muscle relaxants. Classification. Sites of action. Properties of an ideal muscle relaxant. Dantrolene and management of MH. Depolarizing muscle relaxants: Structure, mechanism of action. Organophosphate poisoning. Adverse effects and contraindications. Non-depolarizing muscle relaxants: Structural classification; sub-classification according to onset-time and duration of action. General comparison of aminosteroids and bisbenzyisoquinoliniums. Comparison of individual agents; metabolism and active metabolites. Unwanted effects. Reversal of neuromuscular blockade: Indications for use; mechanisms of action; clinically unwanted effects of reversal of neuromuscular blockade.
		Physiol O Gas Exchange Hb function Pulmonary ventilation, IPPV	57-60 Gaseous exchange: O ₂ and CO ₂ transport, hypoxia and hyper- and hypocapnia, hyper- and hypobaric pressures. Function of haemoglobin in oxygen carriage and acid-base equilibrium. Pulmonary ventilation: volumes, capacities, flows, dead space, compliance, work of breathing. Effect of IPPV on lungs.

		<p>Physiol P Mechanism of ventilation Control of breathing Altitude. Non-resp funct.</p>	<p>61-64 Mechanics of ventilation: ventilation/perfusion abnormalities, regional V/Q, surfactant. Control of breathing, acute and chronic ventilatory failure, effect of oxygen therapy. Effects of altitude. Non-respiratory functions of the lungs.</p>
		<p>Physiol H O2 Carriage WCC, Inflammation Immunodeficiency</p>	<p>24-28 Alternative oxygen carrying solutions. White blood cells: types, origins, characteristics, turnover. The inflammatory response, systemic inflammatory responses, hypersensitivity reactions. Immunity and allergy; innate vs acquired, non-specific vs specific, humoral vs cellular. Immunodeficiency – congenital and acquired.</p>
19/3/13	UHW	<p>Pharm K Benzodiazepines LA Analgesics</p>	<p>30-35 Benzodiazepines: classification of action. Clinical actions. Synergism with anaesthetic agents. Antidote in overdose. Local anaesthetic agents. Additional effects, including anti-arrhythmic effects. Mechanism of action. Clinical factors influencing choice: operative site, patient, available agents. Toxicity syndrome; safe clinical and maximum clinical doses; treatment of overdose. Analgesics. Simple analgesics, NSAIDs and opioids. Available routes of administration; peri-operative prescribing; chronic compared with acute pain prescribing. Aspirin and paracetamol. Comparison of structures; indications and contraindications; mechanisms of action. Bioavailability; metabolism; toxicity. Non-steroidal anti-inflammatory analgesics: Classification. Mechanism of action. Clinical effects and uses; unwanted effects, contraindications. Opioid analgesics: Receptor classification. Mechanism of action. Inhibitory effects, sites of action on pain pathways. Unwanted effects. Full and partial agonists and partial agonists. Routes of administration.</p>
		<p>Physiol U Pain Spinal cord</p>	<p>75-76 Pain: afferent nociceptive pathways, dorsal horn, peripheral and central mechanisms, neuromodulatory systems, supraspinal mechanisms, visceral pain, neuropathic pain, influence of therapy on nociceptive mechanisms. Spinal cord: anatomy and blood supply, effects of spinal cord section.</p>
		<p>Physiol T Motor function Sensory function</p>	<p>73-74 Motor function: basal ganglia, spinal and peripheral. Sense: receptors, nociception, proprioception, sight, taste, smell, hearing, balance, touch, temperature.</p>
		<p>Physics K Transformers/Inductors Transistors/diodes Amp, ECG, fourier analysis Amp of biosignals Piezo-electric devices</p>	<p>47-53 Transformers, inductance. Transistors, diodes. Amplifiers: band width, low pass, high pass, band pass filters. ECG: principles including electrodes and electrode placement. Fourier analysis. Amplification of biological signals: including ECG, EMG, EEG, BIS, CFM, CFAM. Piezo-electric devices.</p>

23/4/13	Swansea	Learning/Teaching The Exam	<i>Annex G</i> Principles of learning & learning theory. How we learn. Teaching techniques: lecture, group, one-to-one. Giving a presentation: design & delivery. Exam technique – approach, style, FAQ's
		Pharm F Pharmacokinetics	17 Pharmacokinetics: general principles: absorption, distribution and redistribution; elimination, excretion. Chemical properties of drugs and their pharmacokinetics: blood-brain-barrier and placental barrier. Protein binding: plasma and tissue. Body compartments; adipose and vessel-poor tissue. Bioavailability; clearance.
		Pharm M ANS Drugs	40-42 Drugs and the autonomic nervous system: anatomy; myelinated and unmyelinated nerves; ganglia and rami communicantes. Neurotransmitters. Sites at which drugs can interfere with autonomic transmission. Drugs and the sympathetic nervous system: adrenergic receptors and molecular mechanisms of action: Indications for pharmacological use of naturally occurring catecholamines and synthetic analogues. Other classes of drugs active in the sympathetic system: e.g. MAOIs. Drugs and the parasympathetic nervous system: nicotinic and muscarinic receptors with subgroups. Mechanism of action. Agonists, antagonists. Comparison of available drugs. Hyoscine and antiemesis.
		Physiol L ECG Control of BP	44-45 Electrocardiogram and arrhythmias, origin of ECG, effects of temperature, ischaemia, infarction and electrolyte imbalance. Neurological and humoral control of systemic blood pressures, blood volume and blood flow [at rest and during physiological disturbances e.g. exercise, haemorrhage and Valsalva manoeuvre]
		Physics I Elec/magnetism Volts, DC/AC, Res/Imp Circuits/Symbols Capacitance Wheatstone Bridge	37-42 Basic concepts of electricity and magnetism. Electrical voltage, AC and DC current, resistance, impedance. Electrical circuits: series and parallel. Symbols of basic components of electrical circuits. Capacitance, inductance. Wheatstone bridge: principles, uses.
		Physics P Measurement of gases pH,PCO ₂ ,PO ₂ ,Electrolytes Derived ABG values O ₂ , CO ₂ , RQ	78-81 Measurement of gas and vapour concentrations: e.g. infra-red, paramagnetic, fuel cell, oxygen electrode, mass spectrometry. Measurement of pH, PCO ₂ , PO ₂ , electrolytes. Derived blood gas variables, e.g. HCO ₃ ^a , HCO ₃ ^s , BE. Siggaard-Andersen nomogram. Measurement of CO ₂ production, oxygen consumption, respiratory quotient.

15/5/13	NHH	Pharm Q CNS/DM Hormones Stimulants	58-65 CNS: antiepileptic agents: Mechanisms of action; unwanted side effects. CNS: antidepressants: Classes of drug; anaesthetic relevance. Therapy for diabetes mellitus: Drugs used in type 1 and type 2 diabetes: Insulins: classification of types available; routes of administration; perioperative management. Unwanted effects and risks and therapy of hypo- or hyperglycaemia. Hormones: corticosteroids: Indications for use; clinical effects; long-term complications of glucocorticoid use. Hormones: treatment of thyroid disorders: Synthesis and release of thyroid hormones. Preparations used in hyper- and hypo- thyroidism. CNS stimulants; classes, mechanisms of action, uses in anaesthesia. RS stimulants including theophyllines, doxapram.
		Physiol W GI functions, N&V, motility Digestion, Immunity	80-83 Gastric function; secretions, nausea and vomiting. Gut motility, sphincters and reflex control – neurohumoral integration. Digestive functions; composition of secretions; digestion of carbohydrates, lipids, proteins, vitamins, minerals. Immune functions.
		Physiol A Body, interior enviro. Birth - Age	1-2 Organization of the human body and control of internal environment. Changes at birth and variations with age.
		Physics R Pumps Monitoring Limits, calibration Cleaning/Sterilising	85-90 Infusion pumps and syringe drivers; including PCA drivers and epidural infusion devices: principles, use, safety, and relevant drug infusion calculations. Environmental monitoring: contamination by anaesthetic gases and vapours. Minimum monitoring standards. Understanding the limits of monitoring equipment. Principles of calibration of monitoring equipment. Principles of hygiene, including cleaning and sterilisation of equipment.
28/5/13	POW	Pharm I Patient responses Genetics	25-26 Differences in patient response to therapy: age; gender; pathology; polypharmacy. Pharmacogenetics: pharmacokinetic variation e.g. pseudocholinesterase; acetylation; CYP450 variants. Poor and fast metabolizers; racial and geographic distribution of common abnormal genes.
		Physiol M Renal: St & Funct. GF Tubular function/Urine	49-51 Structure and function, renal circulation. Blood flow and glomerular filtration, plasma clearance and tubulo-glomerular feedback. Tubular function and urine formation; transport processes.
		Physiol J Cardiac: St & funct Cardiac cycle, rhythm, reg	38-41 Cardiac muscle contraction. The cardiac cycle: pressure volume relationships, work. Regulation of cardiac function; general and cellular.
		Physics L Interference Processing/storage Transducers, LASER's US, optical fibres	54-59 Electrical interference: sources, methods of reduction. Processing, storage, display of physiological measurements. Transducers and strain gauges. Lasers: basic principles and safety. Ultrasound: basic principles of ultrasound. Demonstrates knowledge of the physics relevant to optical fibres.

12/6/13	WWG/H*West	Pharm P Respiratory drugs GI/antiemetics Renal	53-57 Respiratory system: general: Classes of drugs acting on the respiratory tract including bronchodilators; oxygen; surfactant; mucolytics; pulmonary vasodilators. Methods of administration; indications for use; mechanisms of action; adverse effects. Respiratory system: drugs used in acute severe asthma and chronic asthma; volatile agents. Mechanisms of action. Gastrointestinal system: general: antisialogogues; drugs reducing gastric acidity; drug effects on the GI tract including gastric and bowel motility. Antiemetics: Anatomical sites for antiemetic action; central and peripheral inputs to vomiting centre; use of dexamethasone. Renal system: diuretics: Classification of diuretics. Unwanted effects; indications for use.
		Physiol N Renal: assessing funct Regulation Urea/creatinine Acid/base Micturition Acute Renal Failure	52-56 Assessment of renal function. Regulation of water and electrolyte [Na^+ , K^+ , Ca^{++} , Mg^{++} , PO_4^{--}] balance; response to fluid loss /hypovolaemia. Role of urea and creatinine measurement. Regulation of acid-base balance. Micturition. Pathophysiology of acute renal failure.
		Physics M Doppler, pacemaker/defib Diathermy Pressure transducers Damping/frequency	60-65 Doppler effect, principle and clinical application. Cardiac pacemakers: principles and classification. Defibrillators and defibrillation: principles, including thoracic impedance, monophasic, multiphasic, implantable devices. Diathermy: monopolar, bipolar; safety and uses. Pressure transducers. Resonance, damping, frequency response.
		Physics Q Pulm funct tests, perfusion. NMB tests	82-84 Simple tests of pulmonary function: peak flow rate, spirometry. Measurement of perfusion: coronary, cerebral, splanchnic, renal. Assessment of neuromuscular blockade.
25/6/13	PCH	Pharm R Antibiotics Drugs affectinf the eye Social	66-68 Antimicrobial agents: general classification: Types of antimicrobial agents: antiviral; antibacterial; antifungal; bacteriostatic and bacteriocidal. Mechanism of action. Indications for use of different classes of antibiotics. Bacterial resistance. Effects of drugs on the eye and vision; includes intra-ocular pressure. Social drugs including tobacco, alcohol and non-legal drugs: anaesthetic relevance.
		Physiol S ANS Reflexes N&V	71-72 Autonomic nervous system; organization, ganglia, adrenergic vs cholinergic. Neurological reflexes: monosynaptic, polysynaptic, stretch, inhibition.

		Physiol AC Physiological changes Circulations Placenta/Fetus Lactation	97-101 Physiological changes associated with pregnancy. Materno-fetal, fetal and neonatal circulation. Function of placenta; placental transfer. Fetus; physiological changes at birth. Lactation.
		Physics N Plenum systems Breathing systems Ventilators CO ₂ /Capnography Pulse oximeter	66-72 Plenum systems: warming blankets, theatre and anaesthetic room ventilation. Breathing systems: Maplesons' classification, coaxial systems, circle systems, T-piece; resuscitation breathing devices. Ventilators: principles, including pressure and flow generators, cycling, minute volume dividers, jet and oscillator ventilators. Disconnection: monitoring of patient ventilatory disconnection. CO ₂ absorption: chemistry, complications. Capnography. Pulse oximetry.
10/7/13	R Glam	Pharm O Anticoagulants Procoagulants Fluids	48-52 Anticoagulants: oral and parenteral. Sites of action; indications use; monitoring effect. Comparison of heparins: unfractionated and fractionated. Newer anticoagulants. Antiplatelet agents. Perioperative management of antiplatelet medication. Pro-coagulants: Drugs. Individual factor concentrates; multi-factor preparations including FFP; vitamin K. Colloids, including blood and blood products: Composition of preparations; safe use and avoidance of errors. Crystalloid fluids: Composition; suitable fluids for maintenance and replacement of losses. Comparison with colloids; unwanted effects.
		Physiol Y Metabolic Pathways Hormonal Control	86-87 Metabolic pathways, energy production and enzymes; metabolic rate; lactate metabolism. Hormonal control of metabolism: regulation of plasma glucose, response to trauma.
		Physiol Z Starvation/obesity Exercise/stress Body temp & regulation	88-89 Physiological alterations in starvation, obesity [including normal and abnormal BMI ranges], exercise and the stress response. Body temperature and its regulation, [including differences at extremes of age]
		Physics O Fires/explosions Gas pressures Blood Pressure PAP CO Measurement	73-77 Fires and explosions: risks and prevention. Measurement of gas pressures. Blood pressure: direct and indirect measurement. Pulmonary artery pressure measurement. Cardiac output: principles of measurement