

OPJS UNIVERSITY, CHURU (RAJASTHAN)



SYLLABUS

FOR

Diploma in Anesthesia Technology
(DAT)

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SCHOOL OF PARA MEDICAL SCIENCE
OPJS UNIVERSITY, CHURU (RAJASTHAN)

2013-14

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SYLLABUS

Duration of course – 2 year (4 Semester)

SEMESTER -I

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DAT-111	ANATOMY	100+50
2.	DAT-112	PHYSIOLOGY	100+50

SEMESTER -II

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DAT-211	MICROBIOLOGY	100+50
2.	DAT-212	PHARMACOLOGY	100+30

SEMESTER -III

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DAT-311	ANAESTHESIA MANAGEMENT	100+50
2.	DAT-312	INTRODUCTION OF ANAESTHESIA	100+50

SEMESTER -IV

S.No.	PAPER CODE	NAME OF PAPER	M.M.(T-S-P)
1.	DAT-411	INSTRUMENTS AND EQUIPMENTS USES FOUR ANAESTHESIA	100+50
2.	DAT-412	CLINICAL ANAESTHESIA TECHNOLOGY	100+50

Details of Syllabus

SEMESTER –I

DAT-111-ANATOMY

INTRODUCTION OF ANATOMY

LANGUAGE OF ANATOMY

VARIOUS OF ANATOMY

- Supine Position , prone position, lithotomy position , varies type of plan, various terms used to various region, terms to describe muscles

BONES IN SKELETON

MUSCLES

- Skeletal muscles
(striated, non striated & cardiac muscle)

SMOOTH MUSCLES

NERVOUS SYSTEM

- (central nervous system, peripheral nervous system)

SKIN AND FASCIAE

- Appendages of skin, layer's of skin

SURFACE MARKING OF VARIOUS BODY PART

VARIOUS ANATOMICAL INSISIOS

UPPER LIMB ANATOMY

- (bone , muscles, vasculature)

ANATOMY THORAX

- (heart & lung, trachea , diaphragm and respiratory muscle)

HEAD , NECK & BRAIN

- Anatomy of skull, neck muscle & Parts of brain .

ABDOMEN

- (quadrants of abdomen, stomach , liver, spleen & Intestine.)

LOWER LIMB ANATOMY

- (bone , muscles, vasculature)

TECHNIQUE & APPROCHER TO HUMEN DISSECTION

DAT-112-PHYSIOLOGY

RESPIRATORY SYSTEM:-

Physiology of breathing , gaseous exchange, respiration, transport of respiratory gases, Lungs volume & capacities, Pulmonary function test.

CARDIOVASCULAR SYSTEM:-

Blood pressure and physiology of heart, cardiac cycle cardiac output , ECG.

DIAGESTIVE SYSTEM:-

Digestive enzyme & gland, digestion of carbohydrate, protein & fat , vitamin

CIRCULATORY SYSTEM:-

RBC, WBC, Platelets, blood components, plasma, blood composition & content collected from various site.

ENDOCRINE SYSTEM:-

Different hormone, their site of production, mech. of action function deficiency syndrome

EXCRETORY SYSTEM:-

Excretory function by kidney, liver, formation of urine

REPRODUCTIVE SYSTEM:-

Male & female genital system , function of overy, function of testis & hormone testosterone, progesterone Estrogen hormone menstruation cycle & fertilization.

SKIN:-

Layers of skin, function of skin

CENTRAL NERVOUS SYSTEM:-

CSF, Function of Brain, special senses smell, taste, touch, hearing.

SEMESTER –II

DAT-211-MICROBIOLOGY

INTRODUCTION OF MICROBIOLOGY

- Defination , type of micro Organism , virus Bacteria , fungi

MORPHOLOGY OF BACTERIA

- Morphology of bacteria , structure and growth of bacteria , classification of bacteria, nutrition of bacteria.

STAINING OF BACTERIA

- Gram stain, I-n Stain , negative stain , Albert stain, spore stain , composition & preparation of staining, reagents and their composition .

GRAM NEGATIVE COCCI

- Gonococci & meningococcal .

GRAM POSITIVE COCCI

- Streptococci, staphylococci, Pneumococci.

GRAM BACILLI

- Salmonella, pseudomonas, shigella, klebsiella, haenophilus E-coli other gram bacilli

GRAM POSITIVE BACILLI

- Anaerobic bacilli – clostridia
- Aerobic – mycobacterium tuberculosis and mycobacterium leprae and corynebacterium diphtheria

DAT-212-PHARMACOLOGY

GENERAL PHARMACOLOGY –

Defination , pharmacokinetics & pharmacodynamics, Adverse drug effects.

RESPIRATORY SYSTEM DRUG –

Drugs use for cough & bronehial asthma.
Drugs used for nebulization.

DRUG ACTING ON CENTRAL NERVOUS SYSTEM –

General anaesthesia , sedative- Hypnotics, drugs.

DRUG ACTING ON KIDNEY –

Diuretics & Anti diuretics drugs

DRUGS AFFECTING BLOOD FORMATION –

anticoagulants, antithrombotic & antiplatelet drugs.

CARDIOVASCULAR DRUG –

Cardiac glycosides and drug for CHF, Antiarrhythmic drug, antianginal & anti ischemic drugs, antihypertensive drugs.

ESSENTIAL DRUG & DRUG USED IN EMERGENCY –

Cardiac glycosides and drug for CHF, Antiarrhythmic drug, antianginal & antiischemic drug, antihypertensive drugs.

- **Mode of action of drugs**
- **Route of drug administration**
- **Drug dose calculation:-** dilution, infusion rate
- **Medical gases, O₂, N₂O**
- **Bronchodilators**
- **Mucolytic agents**
- **Antihistamines**
- **Steroids**
- **Drugs affecting autonomic nervous system isotropic agents chronotropic agents**
- **Antihypertensive**
- **Anti heart failure**
- **Analgesic , sedative**

EMERGENCY DRUGS

- Adrenaline : Mode of administration, dilution, dosage,
- , Isoprenaline
- Atropine, bicarbonate, calcium, ephedrine, xylocard,
- Ionotropes : dopamine, dobutamine, amidarone
- Aminophylline, hydrocortisone, antihistamines, potassium.
- Cardiovascular drugs
- Antihypertensives
- Antiarrhythmics
- Beta - Blockers
- Ca - Channel blockers.
- Vasodilators - nitroglycerin & sodium nitroprusside
- Respiratory system - Bronchodilators, respiratory stimulants

Bronchiolytic agents

- Renal system - Diuretics, furosemide, mannitol

SEMESTER – III

DAT-311-ANAESTHESIA & MANGEMENT

INTRODUCTION

OXYGEN THERAPY – Physiology of oxygen, oxygen and CO² Transport to the tissue
methods of oxygen administration

Acid base balance, buffer, - interpretation and management, acid base homeostasis,
buffer system, homeostasis buffer, fluid balance, fluid management.

Monitor in Anesthesia – pulse, ABP (Arterial Blood Pressure) blood flow detectors, E.C.G
.temperature monitoring, heart rate, drugs interaction, advance drug reaction. **Risk of
anesthesia in cardiac patient**-Hypertension, myocardial, cardiac failure

Anesthesia management – Role of anesthesia in management the ICU, casualty,
psychological problems in ICU hazards of treatment in ICU.

DAT-312-INTRODUCTION OF ANESTHESIA

Anesthesia Introduction - Gen Anesthesia Inhalation Anesthetic

Technique of induction and ventilation with beg or mask

Laryngoscope Endotrachial intubations

Lateral and sitting position of the patient for spinal /epidural anesthesia spinal tray ,

Epidural tray

facility for oxygenation a good overhead lighting system

Local anesthetics Drugs: Methods of Administration.

SEMESTER – IV

DAT-411-INSTRUMENT AND EQUIPMENTS USES FOR ANESTHESIA

- Anesthesia machine-Bowel's machine, gas cylinder , flow meters, vaporizers.
- Breathing circuits and attachments-Schimmel Busch mask ,Magill's breathing attachments , closed or Rebreathing system , reservoir Bag Breathing tube(Face mask, harness, Endotracheal tubes & connectors, catheter mounts,
- Instrument aiding anesthesia- Laryngoscope, Macintosh spray, Ambulance bag, medical suction Apparatus , Oropharyngeal airway .

DAT-412-CLINICAL ANAESTHESIA TECHNOLOGY

1. Pre operative preparation Pre Anaesthetic Assessment
History of present assessment
Past history with emphasis on previous illness and surgery
Personal history –
Smoking, alcohol
Physical examination – General and systemic
2. Informed consent
3. Premedication: Aims
 - a. Narcotics
 - b. Antihistaminics
 - c. Antacids
 - d. Others - NTG
4. Investigations
Biochemistry –
Blood, glucose, Urea, Creatinine
Haematology –
Haemogram, Prothrombin Time, Partial thromboplastin time, BT, CT
Urine-Complete urine analysis
ECG Chest X- ray ABG
5. Criteria used for accepting the case for surgery
6. Equipment
Checking the machine, laryngoscopes, tubes, airways etc. suction apparatus, oxygen Cylinder, anaesthetic drugs and emergency drugs.
7. Monitoring system

8. Induction –
 - Anaesthesia
 - Endotracheal intubation, confirming the tube position and securing the tube
 - Maintenance of anaesthesia
 - Fluid / Blood and electrolyte balance
 - Reversal from anaesthesia –
9. Preparations
 - a. Identification
 - b. Consent
 - c. NPO
 - d. Prosthesis
 - e. Lab results
 - f. Consultation
 - g. Blood
10. Testing Machine
 - a. Gas supply
 - b. Flow meters
 - c. O
 - f. Peripheral nerves
11. Intubation
 - a. Choice of ETT
 - b. Choice of Laryngoscop
 - c. Techniques of intubation
 - d. Complications
 - e. Difficult intubation .
