THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI – 600 032.

SYLLABUS - DIPLOMA IN ACCIDENT & EMERGENCY CARE TECHNOLOGY

2010 – 2011

Overview

	Year	Subjects		
		Regular	**Weekly sessions**	**Postings**
Diploma	**1**	English		Hospital orientation
		Hospitals & patients: Orientation		Emergency Department
		Computers		Pharmacy
		Introduction to EM		Radiology
		Emergency Medical Services (EMS)		Physiotherapy/Speech
		Anatomy		Patient support
		Physiology		Patient transport
		Biochemistry		Ambulance
	2	Pathology	Cardiovascular emergencies	Emergency department
		Microbiology	Respiratory emergencies	Ambulance
		Pharmacology	Neurological emergencies	
		Clinical medicine	Nephro/Urology emergencies	
		Triage and general emergencies	Gastro-intest. emergencies	
		Life support & resuscitation	O & G emergencies	
		Trauma care		

Year -1

Section-1 (months: 1-3)
English

- **Communication:-**
  - Role of communication
  - Defining Communication
  - Classification of communication
  - Purpose of communication
  - Major difficulties in communication
  - Barriers to communication
  - Characteristics of successful communication – The seven Cs
  - Communication at the work place
  - Human needs and communication "Mind mapping"
  - Information communication
- **Comprehension passage:-**
  - Reading purposefully
  - Understanding what is read
  - Drawing conclusion
  - Finding and analysis
- **Explaining:-**
  - How to explain clearly
  - Defining and giving reasons
    - Explaining differences
    - Explaining procedures
    - Giving directions
- **Writing business letters**:-
  - How to construct correctly
  - Formal language
  - Address
  - Salutation
  - Body
  - Conclusion
- **Report writing:-**
  - Reporting an accident
  - Reporting what happened at a session
  - Reporting what happened at a meeting

Section-2 (months 1-3)

Hospitals & patients: Orientation
Hospitals

- History
- Classification
- Organisation & structure
- Doorway to the hospital – Emergency department
- Departments & Teams
- Paramedical Staff
- Ancillary departments
  - Lab
  - Pharmacy
  - Imaging
  - Physio/speech

- Patient support services
- Admin/Billing
- Medical insurance
- Patient transport
- Dietary
- Social services

- Health information management
  - Medical terminology
  - Medical records
  - Electronic Medical Records
  - Medico-legal issues

Section-3 (month: 4)

Computers

- Hardware
  - CPU
  - I/O devices
  - Memory
- Software
  - Operating systems
  - Applications
  - Word processing
  - Presentations
- Internet
  - E-mail
  - Search engines
  - Uploading/downloading files
  - Cloud computing
  - Educational sites

Section-4 (month-4-5)

- Introduction to EM
  - History of Emergency Medicine
  - Understanding Emergency Medicine (the specialty, Its pros & cons)
  - Training in Emergency Medicine

- Emergency Medical Services (EMS)-history and current trends
  - History
  - Pre-hospital transport
  - Roles & responsibilities
  - Legal issues
  - Moving patients
  - Principles of life support

Anatomy (Month-7)

- Basic Anatomical terminology
  - The human body
  - Skeleton
  - Brain
  - Head and neck
  - Limbs
  - Thorax
  - Abdomen

Physiology (Month-8-9)

- The Cell:
    - Cell Structure and functions of the various organelles.
    - Endocytosis and exocytosis
- The Blood:
    - Composition of Blood
    - functions of the blood and plasma proteins, classification and protein.
    - Pathological and Physiological variation of the RBC.
    - Function of Hemoglobin
    - Erythrocyte Sedimentation Rate.
    - Detailed description about WBC-Total count (TC), Diffierential count (DC) and functions.
    - Platelets – formation and normal level and functions
    - Blood groups and Rh factor

Biochemistry (Month-10)

- Carbohydrates--Glucose and Glycogen Metabolism
- Proteins:-Classification of proteins and functions
- Lipids:-Classification of lipids and functions
- Vitamins & Minerals:
    - Fat soluble vitamins(A,D,E,K) – Water soluble vitamins – B-complex
    - vitamins- principal elements(Calcium, Phosphorus, Magnesium, Sodium,
    - Potassium, Chlorine and sulphur)- Trace elements – Calorific value of foods –
    - Basal metabolic rate(BMR) – respiratory quotient(RQ) Specific dynamicaction(SDA)
    - Balanced diet – Marasmus – Kwasoirkar

Year -2

Pathology (Month 1-3)

- Cell
    - Cellular adaptation, Cell injury & cell death.
    - Overview: Cellular response to stress and noxious stimuli.
    - Cellular adaptations of growth and differentiation.
    - Examples of cell injury and necrosis
- Inflammation.
    - General features of inflammation
    - Historical highlights
    - Acute inflammation
    - Chemical mediators of inflammation
    - Outcomes of acute inflammation
    - Morphologic patterns of acute inflammation
    - Summary of acute inflammation
    - Chronic inflammation
- Immunity disorders.
    - General features of the immune system
    - Disorders of the immune system
- Neoplasia.
    - Definitions
    - Nomenclature
    - Biology of tumor growth benign and malignant neoplasms
    - Epidemiology
    - Carcinogenic agents and their cellular interactions
    - Clinical features of tumors

Microbiology (Month-4)

- Morphology and physiology of bacteria
- Sterilization and disinfection
- Culture media and methods
- Bacterial taxonomy
- Parasites and diseases
- General properties of viruses
- AIDS
- Normal microbial flora of human body
- Immnophrophylaxis

Pharmacology (Month-4)

- Introduction and Sources of drugs
- Route of admin
- Pharmacokinetics
- Adverse drug reactions

Clinical medicine (Month 5-6)

- Public health
    - Importance of Community Medicine
    - Modes of Transmission of Diseases
    - Principles of Prevention & Control of Diseases
    - Hospital infections, disinfection, disinfestation and sterilisation
    - Disposal of Hospital wastes
    - Important Communicable diseases (various systems)
    - Health education

- Individual Patient care
    - The Art of History taking
    - Physical examination (GPE & different systems)
    - The Unconscious patient
        - Diagnosis of Brain death
        - Case presentation

- Nursing –principles
    - Introduction to Nursing health & Health care system
    - Nurse patient relationship
    - Good Housekeeping/Hygiene needs
    - Vital signs
    - First aid & Nursing emergencies

System	Topics	Anatomy	Physiology/ Biochem	Pharmacology	Skills	Equipment (projects)
Triage and general emergencies	Triage Hospital infection	Human body	Auscultatory areas Heart sounds. Arterial pressures, blood pressure	disinfectants	Triage-Emergency severity Index Measuring BP Universal precaution	BP apparatus Pulse oximeter Thermometer Personal Protective Equipment
	Shock/ Dehydration		Fluid & electrolyte balance Oxygen delivery to tissues Acid –base regulation	Oxygen IV fluids Sodium Bicarbonate	ABG Fluid and drug administration Maintaining I/O chart	MPM monitor ABG analyser Syringe pump Infusion pump
	Hypoglycemia/ hyperglycemia		Glucose and Glycogen Metabolism	Insulin OHA dextrose	IV access	Glucometer
	Anaphylaxis/Allergy		Type IV hypersensitivity	Corticosteroids Antihistamincs		
Life support & resuscitation	Adult life support Pediatric Life Support Special resuscitation situations Safety during CPR training and actual rescueRisk factors and prudent heart living	Airway	Cardiopulmonary function & actions for survival	Adrenaline Atropine Amiodarone	BLS ACLS Intubation	Defibrillator Suction apparatus Airway trolley Crash cart
Trauma care	Extremity trauma Head trauma & spine injury Chest trauma Abdominal trauma	Osteology	Metabolic response to trauma Hypovolemic shock	Blood transfusion	ATLS Transport	Cervical collar Spine board/scoop stretcher Pelvic binder

EXAMINATION PATTERN FOR Diploma A & E Tech

FIRST YEAR:

Sl. No.	Subject Title	I A		University Exam	
		Max	Min	Max	Min
1.	Anatomy, Physiology, Biochemistry	50	25	100	50
2.	Hospital orientation, management, and computers	50	25	100	50
3.	English	50	25	100	50
4.	Emergency medicine (EM) and EMS	50	25	100	50

First Year	Subjects	Max	Min
Paper I	Anatomy, Physiology, Biochemistry	100	50
Paper II	Hospital orientation, management, and computers	100	50
Paper III	English**	100	50
Paper IV	Emergency medicine (EM) and EMS	100	50
	Internal Assessment (IA)	100	50
Failure to achieve 50% in any one paper will result in fail in theory exam)			
IA marks should be 50% or above to be eligible to write the exam			
Internal assessment marks: Theory test -20; practicals-20; projects/logbook-10			
No practical exam in 1st year			
**English will be the internal paper, institution will send the marks to the university			

SECOND YEAR:

Sl. No.	Subject Title	I A		University Exam		Practical		Viva Voce	
		Max	Min	Max	Min	Max	Min	Max	Min
1.	Pathology, Microbiology, Pharmacology	50	25	100	50				
2.	Patient examination, nursing	50	25	100	50	50	25	50	25
3.	Emergency medicine (EM) and EMS Practical exam on Patient Examination, Nursing, Triage, Life Support, Trauma care	50	25	100	50	50	25	50	25

Second year	Subjects	Max	Min
Paper I	Pathology, Microbiology, Pharmacology	100	50
Paper II	Patient examination, nursing	100	50
Paper III	Emergency medicine (EM) and EMS Practical exam on Patient examination, nursing, Triage, Life support, Trauma care	100 100	50 50

EXAMINATION QUESTION PAPER PATTERN

Essay	3 x 10 = 30 Marks
Short Notes	10 x 5 = 50 Marks
Short Answers	10 x 2 = 20 Marks
Total	100 Marks

Textbooks

Contemporary Communicative English for Technical Communication
Board of Editors
ISBN: 8131755908
ISBN-13: 9788131755907
Language: English
Publisher: Pearson
Education

An Introduction to Clinical Emergency Medicine
Guide for Practitioners in the Emergency Department
View All Contributors
Paperback
ISBN: 9780521542593
DOI:
10.2277/0521542596

Hospitals: What They Are and How They Work, Fourth Edition
Author(s): Donald J. Griffin, MBA, MS, MS, JD, FACHE, Assistant Professor, School of Health Administration, Texas State University, San Marcos, Texas
Details: ISBN-13: 9780763791094,
Paperback 438 pages © 2012

Computers in Medicine
Lele, R D
ISBN: 0070585350
ISBN-13: 9780070585355
Publisher: McGraw-Hill Education (India) Pvt Ltd
Community medicine by Park

Fundamentals Of Nursing: The Art And Science Of Nursing Care (fundamentals Of Nursing)
Carol Taylor, Carol Lillis, Priscilla LeMone, Pamela Lynn
ISBN: 0781781574
ISBN-13: 9780781781572
Publisher: Lippincott Williams & Wilkins,

The Basic EMT (2003 Edition) - Hardcover Version: Comprehensive Prehospital Care (basic Emt)
Norman E. McSwain
ISBN: 0323022561
ISBN-13: 9780323022569
Publisher: Mosby

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