

SUMANDEEP VIDYAPEETH

(Declared as Deemed to be University under Section 3 of the UGC Act 1956)

Accredited by NAAC with a CGPA of 3.53 out of four-point scale at 'A' Grade

Category – I deemed to be university under UGC Act - 2018

At & Post Piparia, Tal: Waghodia 391760 (Gujarat) India.

Ph: 02668-245262/64/66, Telefax: 02668-245126,

Website: www.sumandeepvidyapeethdu.edu.in



CURRICULUM Bachelor of Science (B.Sc)

TRAUMA CARE AND EMERGENCY MANAGEMENT

Attested CTC

Charaney
15/2/2021

Vice-Chancellor

Sumandeep Vidyapeeth

An Institution Deemed to be University

Vill. Piparia, Taluka: Waghodia.

Dist. Vadodara-391 760. (Gujarat)

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AMENDED UP TO DECEMBER -2020

INTRODUCTION

Scope

The quality of paramedical care has improved tremendously in the last few decades due to the advances in technology, thus creating fresh challenges in the field of healthcare. It is now widely recognized that health service delivery is a team effort involving both clinicians and non-clinicians, and is not the sole duty of physicians and nurses. Professionals that can competently handle sophisticated machinery and advanced protocols are now in high demand. In fact, diagnosis is now so dependent on technology, that paramedical and healthcare professionals are vital to successful treatment delivery.

Effective delivery of healthcare services depends largely on the nature of education, training and appropriate orientation towards community health of all categories of health personnel, and their capacity to function as an integrated team, with a range of skills and expertise, play key roles within the National Health Service, working autonomously, in multi-professional teams in various settings. All of them are first-contact practitioners and work across a wide range of locations and sectors within acute, primary and community care.

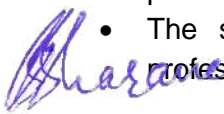
Learning goals and objectives for paramedical healthcare professionals

The learning goals and objectives of the undergraduate and graduate education program will be based on the performance expectations. They will be articulated as learning goals (why we teach this) and learning objectives (what the students will learn). Using the framework, students will learn to integrate their knowledge, skills and abilities in a hands-on manner in a professional healthcare setting.

Program outcomes

- To demonstrates competency in the knowledge and skills in providing comprehensive nursing care based on problem solving approach in the hospital and community.
- To demonstrates competency in the skills and techniques of nursing based on concepts and principles from selected areas of physical, biological and behavioral sciences.
- The student is professionally competent to be a member of health team in meeting the promotive, preventive and restorative health needs of the society.
- The student is capable to demonstrate skills in teaching, management, interpersonal relations and communication.
- To demonstrates leadership qualities and decision-making abilities to function effectively in various situations.
- The student is aware of moral and ethical values and practices them in personal and professional life.
- The student recognizes the need for continued learning for their personal and professional development.

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Ethics and accountability

Students will understand core concepts of clinical ethics and law so that they may apply these to their practice as healthcare service providers. Program objectives should enable the students to:

- Describe and apply the basic concepts of clinical ethics to actual cases and situations
- Recognize the need to make health care resources available to patients fairly, equitably and without bias, discrimination or undue influence
- Demonstrate an understanding and application of basic legal concepts to the practice
- Employ professional accountability for the initiation, maintenance and termination of patient-provider relationships
- Demonstrate respect for each patient's individual rights of autonomy, privacy, and confidentiality

Commitment to professional excellence

The student will execute professionalism to reflect in his/her thought and action a range of attributes and characteristics that include technical competence, appearance, image, confidence level, empathy, compassion, understanding, patience, manners, verbal and non-verbal communication, an anti-discriminatory and non-judgmental attitude, and appropriate physical contact to ensure safe, effective and expected delivery of healthcare. Program objectives will aim at making the students being able to

Eligibility for admission:

He/she has passed the Higher Secondary (10+2) Science or a duly constituted Board with pass marks in Physics, Chemistry, Biology

Duration of the course:

Duration of the course is 4 years including 1 year internship.

Attendance:

A candidate has to secure minimum 80% attendance in overall with at least-

1. 75% attendance in theoretical
2. 80% in Skills training (practical) for qualifying to appear for the final examination.

No relaxation, whatsoever, will be permissible to this rule under any ground including indisposition etc.

Medium of instruction:

English shall be the medium of instruction for all the subjects of study and for examination of the course.

Assessment: Assessments should be completed by the academic staff, based on the compilation of the student's theoretical & clinical performance throughout the training programme. To achieve this, all assessment forms and feedback should be included and evaluated. Student must attain at least 50% marks in each Theory, Internal assessment and Practical independently / separately for each individual subject.

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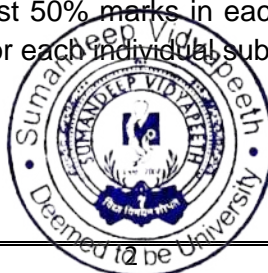
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COURSE OF INSTRUCTION

Course Name	Course code	Theory (In hrs.) (Class and lab)	Practical (In hrs.) (Clinical)
First Year - Total Hours 600			
Anatomy	BETC110	60	40
Pathology	BETC120	60	40
Physiology	BETC130	60	40
Microbiology	BETC 140	60	40
Triage–Technology	BETC 150	60	40
Equipment In Emergency	BETC160	60	40
Total		360	240
Second Year - Total Hours 500			
Anatomy II	BETC210	60	40
Pathology II	BETC220	60	40
Physiology II	BETC230	60	40
Clinicalmedicine	BETC240	60	40
Pharmacology	BETC 250	60	40
Total		300	200
Third Year - Total Hours 700			
Equipmentinemergency	BETC310	60	40
Clinicalmedicine	BETC320	60	40
Basic Of Criticalcare Services	BETC330	60	40
Clinicalmedicine	BETC340	60	40
Triage–Technology	BETC350	60	40
Noncommunication Medicine	BETC360	60	40
Comunicationmedicine	BETC370	60	40
Total		420	280

SCHEME OF EXAMINATION

Course	Course Code	Assessment			
		Hours	Internal	External	Total
First Year					
Anatomy	BETC110	3	20	80	100
Pathology	BETC120	3	20	80	100
Physiology	BETC130	3	20	80	100
Microbiology	BETC 140	3	20	80	100
Triage–Technology	BETC 150	3			
Equipment in Emergency	BETC160	3			

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Total			80	320	400
Second Year -					
Anatomy II	BETC210	3	20	80	100
Pathology II	BETC220	3	20	80	100
Physiology II	BETC230	3	20	80	100
Clinicalmedicine	BETC240	3	20	80	100
Pharmacology	BETC 250	3	20	80	100
Total			80	320	400
Third Year -					
Equipmentinemergency	BETC310	3	20	80	100
Clinicalmedicine	BETC320	3	20	80	100
Basic Of Criticalcare Services	BETC330	3	20	80	100
Clinicalmedicine	BETC340	3	20	80	100
Triage–Technology	BETC350	3	20	80	100
Noncommunication Medicine	BETC360	3	20	80	100
Comunicationmedicine	BETC370	3	20	80	100
Total			60	240	300

FIRST YEAR B.SC IN TRAUMA CARE AND EMERGENCY MANAGEMENT

BETC- 110 ANATOMY HOURS

60

Introduction of Bones of the Human Body of:

- Upper Limb : clavicle, scapula, humerus, radius, ulna, carpus, metacarpus & phalanges
- Lower Limb : hipbone, femur, tibia, fibula, tarsus, metatarsus & phalanges
- Skull : name the bone of skull and sutures between them
- Thorax : ribs and their articulations
- Vertebral Column : Cervical, thoracic, lumbar, sacral and coccyx vertebrae
- Nine regions of the abdomen
- Introduction of different Vital Organs :
- Respiratory Organs : (Brief description)
- Nasopharynx
- Oropharynx

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- Trachea
- Bronchi
- Lungs (and their lobular segments)
- Thoracic cavity

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- Pleura and Pleural cavity
- B) Circulatory Organs : (Brief description)
- Anatomical position of the heart
- Pericardium of the heart
- Chambers of the heart
- Great vessels of the hear
- Valves of the heart
- Digestive Organs : (Brief description)
- Tongue
- Teeth
- Oral cavity
- Pharynx
- Oesophagus
- Stomach
- Small intestine
- Large intestine and its colons

BETC120- PATHOLOGY

60

HOURS

Hematology:

- ESR
- Methods
- Factors – Affecting ESR
- Normal Values
- Importance

RBC – Indices WBC

- Platelets 5 II. Body Fluids :

Urine :

- Method of Collection
- Normal Constituents
- Physical Examination
- Chemical Examination

Stool Examination:

- Method of Collection
- Normal Constituents and appearance
- Abnormal Constituents (Ova, Cyst)

C.S.F. Examination

- Physical Examination
- Chemical Examination
- Microscopy
- Cell 1 Count
- Staining

Semen Analysis

- Collection
- Examination
- Special Tests

Practic I

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- Urine, Stool, Semen and C.S.F. – Collection, Handling, Examinations
- Absolute Eosinophil Count, PCV, RBC indices, ESR Estimation, Platelet Count
- Collection of Sample
- Hb estimation
- TLC and DLC
- RBC Count
- Peripheral blood film – staining and study of Malarial Parasite II. Laboratory management – Sample Collection, Labeling, Transport, Screening, Reporting and Dispatch of Reports.

BETC 130-PHYSIOLOGY HOURS

60

Brief Description of various organs systems:

Cell:

- Definition
- Structure and functions the cytoplasmic Organelles
- Reproduction : Meiosis, Mitosis

The important physic-chemical laws applied to physiology

- Diffusion
- Osmosis
- Bonding
- Filtration
- Dialysis
- Surface Tension
- Adsorption
- Colloid

Fundamentals of different Organ Systems inbrief:

- Cardiovascular System
- Respiratory System
- Digestive System
- Excretory System
- Reproduction System
- Endocrine System
- Lymphatic System
- Practical
- Viva and diagrams of different Vital Organs

BETC140-MICROBIOLOGY HOURS

60

Introduction of brief history of Microbiology

Historical Aspect

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- Relationship of Micro-organism to men
- Micro-organism in Disease and Health
- Requirement and uses of common Laboratory Equipments
- Incubator, Hot Air Oven, Water Bath
- Anaerobic Jar, Centrifuge, Autoclave
- Microscope
- Glassware – Description of Glassware, its use, handling and care
- Sterilization:
 - Definition
 - Classification and General Principal of Sterilization
 - Autoclave – its structure, functioning, control and indicator
 - Antiseptics & Disinfectants
 - Definition
 - Types
 - Mode of Action
 - Uses
- Collection, Transportation and processing of clinical samples for Microbiological Investigation

Bacteriology

- Definition
- Bacteria – General characteristics of Bacteria
- Classification and morphology of Bacteria
- Structure of Cell, Capsule, Flagella, and Spore
- Growth of Bacteria
- Nutrition of Bacteria

Virology:

- Definition
- General Introduction of Virus
- Physiochemical characteristic of Viruses
- Diseases caused by different Virus and mode of infection

Parasitological:

- Definition
- General Characteristics of Parasite
- Classification of Parasite
- Mode of transmission

Fungus:

- Definition
- Structure
- Classification

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TRIAGE AND GENERAL EMERGENCIES

- Hospital infection
- Shock, dehydration
- Hypoglycemia & hyperglycemia
- Anaphylaxis
- Extremity trauma
- Head trauma
- General traumatic condition
- Spine injury
- Chest injury
- Abdomen trauma
- Bleeding condition

EQUIPMENT IN EMERGENCY

- BP operator
- Pulse Oximeter
- Thermometer
- Personal Protective equipment
- MPM monitor
- ABG Analyzer
- Syringe pump
- Infusion pump
- Maintenance therapy

Each student shall undergo training in Skill Simulation Laboratory for learning certain basic clinical skills like IV/IM injection, setting IV line, Cardio-pulmonary resuscitation (CPR), and Life support skills in the beginning of second year, for duration of continuous four days. (Board of Studies letter No.:FPMS/SV/BOS-MIN/0006/2016-17, dated 19/04/2017, and vide notification of Board of Management resolution Ref.:No. SVDU/R/2017-18/5056, dated 09/01/2018).

SECOND YEAR B.SC IN TRAUMA CARE AND EMERGENCY MANAGEMENT

Introduction of various vital organs

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- Reproductive Organs : (In Brief)
- Male & Female Gonads: Testes, Epididymis, Ovary, Fallopian Tube, Uterus, Vagina etc.
- Introduction of male Genital Organs
- Introduction of female Genital Organs

Liver and Spleen:

- Introduction
- Anatomical Position

Gallbladder

- Introduction Anatomical position.

Excretory Organs;

- Cortex and medulla of kidney
- Ureter
- Urinary Bladder
- Urethra (male and female)

BETC220-PATHOLOGY

60 HOURS

Human blood group antigens and antibodies

- ABO Blood group systems
- Sub. –group
- Source of antigens and types of antibodies
- Rh Blood group System
- Types of Antigen
- Mode of Inheritance
- Types of Antibodies
- Erythroblastosis fetalis
- Blood Collection
- Selection and screening of donor
- Collection of blood
- Various anticoagulants
- Storage of Blood
- Changes in Blood on Storage

COOMB'S Test

- Direct and Indirect Test
- Titration of Antibody
-

HISTOPATHOLOGY (Theory and Practical)

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- Fixation of tissues
- Classification of Fixatives
- Tissue Processing

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- Collection
- Steps affixation
- Section Cutting
- Microtome and Knives
- Techniques of Section Cutting
- Mounting of Section
- Frozen Sections
- Decalcification
- Fixation
- Decalcification
- Endpoint
- Staining Dyes and their properties, H & E Stain, Special Stains

IMMUNOLOGY AND SEROLOGY

- Hormones –
- Thyroid Hormones
- Growth hormones
- Insulin Glycosylated Hemoglobin

COOMB'S Test

- Direct and Indirect Test
- Titration of Antibody

HISTOPATHOLOGY (Theory and Practical)

- Fixation of tissues
- Classification of Fixatives
- Tissue Processing
- Collection
- Steps of fixation
- Section Cutting
- Microtome and Knives
- Techniques of Section Cutting
- Mounting of Section
- Frozen Sections
- Decalcification
- Fixation
- Decalcification
- Endpoint
- Staining Dyes and their properties, H & E Stain, Special Stains

Brief description of various vital organ systems.

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Blood

- Definition
- Composition
- Function

Formation of different type of blood cells

- Erythrocytes
- Leucocytes
- Thrombocytes

Mechanism of Blood Clotting

Cerebrospinal Fluid

- Formation
- Composition
- Function

Special Senses in brief

- Hearing
- Taste
- Smell
- Touch
- Sight

BETC240-CLINICALMEDICINE HOURS

60

PUBLIC HEALTH

- Introduction of community medicine
- Transmission of disease
- Preventive of Disease
- Principle of prevention of control & disease
- Hospital infection and & control of infection Disease
- Hospital waste management
- Communicable disease
- Health education & promotion
- Accident as non communicable disease

PATIENT CARE

- History taking
- Physical examination
- The unconscious patient
- Diagnosis of emergency
- Diagnosis to brain death
- Case presentation

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BETC250-PHARMACOLOGY

60

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HOURS

RESPIRATORY SYSTEM DRUG –

- Drugs use for cough & bronchial asthma. Drugs used for mobilization.

DRUG ACTING ON CENTRAL NERVOUS SYSTEM –

- General anesthesia, sedative- Hypnotics, drugs.

DRUG ACTING ON KIDNEY –

- Diuretics & Anti diuretics drugs

DRUGS AFFECTING BLOOD FORMATION –

- Anticoagulants, antithrombotic & ant platelet 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.

EMERGENCY DRUGS

- Adrenaline : Mode or administration, dilution, dosage,
- Isoprenaline
- Atropine, bicarbonate, calcium, ephedrine, xylocard,
- Ionotropes : dopamine, dobutamine, amiodaron
- Aminophylline, hydrocortisone, antihistamics, potassium.

THIRD YEAR B.SC IN TRAUMA CARE AND EMERGENCY MANAGEMENT

BETC260-BASIC OF CRITICAL CARE SERVICES

60

HOURS

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BASIC OF CRITICAL CARE SERVICES

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- Introduction
- Cardiopulmonary resuscitation- basic & advanced
- Advanced cardiac life support
- Oxygen therapy
- Aerosol therapy
- Mechanical ventilation
- Patient Para monitoring
- Complication in ICU care
- Nutrition for critically ill patients
- ICU infection Ethics & behavioring ICU

**INTERNSHIP (INTEGRATED PRACTICE) -
1440**

TOTAL HOURS

- The internship will be 1 Year. This will include 6 hours of practice a day, totaling to 1440 hours during internship year. As a part of this, the students will maintain a work logbook which will be duly endorsed by the supervisor or trainer. At the end of internship, the candidate shall submit the work log book along with certificate from the training institute.
- The internship time period provides the students the opportunity to continue to develop confidence and increased skill in clinical delivery of services. Students will demonstrate competence in beginning and intermediate procedures. Students will observe the advanced and specialized procedures. The student will complete the clinical training by practicing all the skills learned in classroom and clinical instruction. The students are expected to work for minimum 6 hours per day and this may be more depending on the need and the healthcare setting.

CODE OF PROFESSIONAL CONDUCT

Introduction

The Code of Professional Conduct is designed and set out as guidance for the clinical practitioner within the relationship that exists with every patient receiving health care.

Essential to that relationship is the patient's trust in the practitioner. This trust hangs upon the patient's assurance of being the practitioner's first concern during their clinical encounter, and upon the patient's confidence that the care received will be competent, whether in diagnosis, therapy or counselling.

Standard of practice and care

Patients are entitled to the highest standard of practice and care. The essential elements of this are professional competence, good relationships with patients and colleagues and observance of professional ethical obligations.

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In providing care you must therefore:

- recognise the limits of your professional competence.
- be willing to consult colleagues
- keep clear, accurate and contemporaneous patient records which report the relevant findings.
- keep colleagues informed.
- pay due regard to the efficacy and the prudent use of resources.
- be competent, truthful, and accurate, when reporting on investigations.
- be competent when giving or arranging treatment.

Patient's rights

- listen to patients and respect their views.
- treat patients politely and considerately.
- respect patients' privacy and dignity.
- give information to patients in a way they can understand.
- respect the right of patients to be fully involved in decisions about their care.
- respect the right of patients to refuse treatment or to take part in teaching or research, reporting the refusal to the person requesting the procedure.
- respond to complaints promptly and constructively.
- ensure that your views about a patient's life style, culture, beliefs, race, colour, sex, sexuality, age, social status, or perceived economic worth, do not prejudice the service you give.

Confidentiality

Patients have a right to expect that you will not pass on any personal information which you learn in the course of your professional duties, unless they agree

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