

Bachelor of Vocational Studies (Hospital Sterilization)
B.Voc. (HST)
Year 1 (Diploma)

Ist Semester				
Sl.No.	Course Code	Subject	Content Type	Credit
1	BVHS -101	Basics of Human Anatomy & Physiology-I	Gen	4
2	BVHS -102	Basic Concepts of CSSD Technology-1	Skill	4
3	BVHS -103	Fundamentals of Microbiology	Gen	4
4	BVHS -104	Reporting and documentation in CSSD	Skill	3
5	BVHS-105	Fundamental of Computers	Gen	3
6	BVHS-106	General English & Soft Skill	Gen	2
7	BVHSP-101	Basics of Human Anatomy & Physiology-I Lab	Skill	2
8	BVHSP-102	Basic Concepts of CSSD Technology-1 Lab	Skill	2
9	BVHSP-103	Fundamentals of Microbiology Lab	Skill	2
10	BVHSP-104	Reporting and documentation in CSSD Lab	Skill	2
11	BVHSP-105	Fundamental of Computers Lab	Skill	2
Total				30
II Semester				
Sl.No.	Course Code	Subject	Type of Course	Credits
1	BVHS-201	Human Anatomy & Physiology –II	Gen	4
2	BVHS-202	Introduction to Hospital Policies and Procedures	Skill	3
3	BVHS -203	Infection control in CSSD	Skill	3
4	BVHS-204	Medical Terminology	Gen	4
5	BVHS -205	OT Instrumentation	Skill	3
6	BVHS -206	Basics of Health Market & Economy	Gen	3
7	BVHSP-201	Human Anatomy & Physiology –II Lab	Skill	2
8	BVHSP-202	Introduction to Hospital Policies and Procedures Lab	Skill	2
9	BVHSP-203	Infection control in CSSD Lab	Skill	2
10	BVHSP-204	Medical Terminology Lab	Skill	2
11	BVHSP-205	OT Instrumentation Lab	Skill	2
		Internship In Hospital		
Total				30

Bachelor of Vocational Studies (Hospital Sterilization)
B.Voc. (HST)
Year II (Advanced Diploma)

IIIrd Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVHS-301	Sterilization Techniques -1	Skill	4
2	BVHS-302	Regulations and Standards in CSSD	Skill	3
3	BVHS-303	Monitoring in CSSD	Gen	4
4	BVHS-304	CSSD Technology I	Skill	3
5	BVHS-305	Advance Computing Skills	Gen	2
6	BVHS-306	Human Values & Professional Ethics	Gen	4
7	BVHSP-301	Sterilization Techniques -1 Lab	Skill	2
8	BVHSP-302	Regulations and Standards in CSSD Lab	Skill	2
9	BVHSP-303	Monitoring in CSSD Lab	Skill	2
10	BVHSP-304	CSSD Technology I Lab	Skill	2
11	BVHSP-305	Advance Computing Skills Lab	Skill	2
Total				30

IVth Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVHS-401	Sterilization Techniques- II	Skill	4
2	BVHS-402	CSSD Technology II	Skill	4
3	BVHS-403	CSSD Safety and Risk Management Techniques	Gen	4
4	BVHS-404	Medical Ethics and Patients Care	Gen	2
5	BVHS-405	CSSD Instrumentation	Gen	2
6	BVHS-406	Advance Communication & Soft Skills	Gen	2
7	BVHSP-401	Sterilization Techniques- II Lab	Skill	2
8	BVHSP-402	CSSD Technology II Lab	Skill	3
9	BVHSP-403	CSSD Safety and Risk Management Techniques Lab	Skill	3
10	BVHSP-404	Medical Ethics and Patients Care Lab	Skill	2
11	BVHSP-405	CSSD Instrumentation Lab	Skill	2
		Internship in Hospital		
Total				30

Bachelor of Vocational Studies (Hospital Sterilization Technology)
B.Voc. (HST)
Year III (Degree)

Vth Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVHS-501	Quality assurance in CSSD department	Skill	4
2	BVHS-502	Professional Etiquettes	Skill	3
3	BVHS-503	Inventory Control in CSSD	Gen	3
4	BVHS-504	Biomedical waste management	Skill	3
5	BVHS-505	Digital Literacy & Account Literacy	Gen	4
6	BVHS-506	Introduction to National Healthcare System	Gen	3
7	BVHSP-501	Quality assurance in CSSD department Lab	Skill	2
8	BVHSP-502	Professional Etiquettes Lab	Skill	2
9	BVHSP-503	Inventory Control in CSSD Lab	Skill	2
10	BVHSP-504	Biomedical waste management Lab	Skill	2
11	BVHSP-505	Digital Literacy & Account Literacy Lab	Skill	2
Total				30

VIth Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVHS-601	Sterile storage and transportation	Gen	6
2	BVHS-602	Administration in CSSD	Gen	6
3	BVHSP-601	Sterile storage and transportation Lab	Skill	2
4	BVHSP-602	Administration in CSSD Lab	Skill	2
5	BVHSP-603	Internship in hospital	Skill	6
6	BVHSP-604	Project Work in Hospital	Skill	8
Total				30

**Bachelor of Vocational Studies (Hospital Sterilization Technology)
Semester -I**

BVHS -101 Basics of Human Anatomy & Physiology-1

Unit -1

Terminology and General Plan of the Body, Body Parts and Areas, Terms of Location and Position, Body Cavities and Their Membranes, Dorsal cavity, Ventral cavity, Planes and Sections, Cells: Structure, function and location, Prokaryotic and eukaryotic cells, Cell organelles, Cell division.

UNIT-2

Tissue, Types, Structure, Location and Function of Epithelial Tissue, Connective Tissue, Muscle Tissue, Nerve Tissue, Membranes, Glandular tissue The Integumentary System: structure and function of The Skin, Subcutaneous Tissue, Musculoskeletal System: Basic anatomy of important muscles and bones.

UNIT-3

Cell physiology: Structure, membrane, transport across cell membrane, Active, Passive, Organization of the Body, Body Composition, Body Fluid Volumes and its measurement, Diffusion, Osmosis, Tonicity, Homeostasis

UNIT-4

Blood-composition, function, cellular component & their function, haemoglobin & anaemia, blood groups and coagulation

BVHS – 102 Basic concepts in HST-1

- UNIT-1 Introduction to CSSD
 - History and development of CSSD
 - Philosophy of CSSD
 - Functions of CSSD -Location ,Physical layout
- UNIT-2 Central Service Workflow
 - Decontamination
 - Preparation
 - Packaging
 - Instrument Assembly Process
 - Basic Job –Knowledge and Skill
- UNIT-3 Zoning
 - Zoning: CSSD & Theatre
 - Protected zone
 - Clean zone
 - Sterile zone
 - Maintaining a sterile field : Factors affecting sterile field
 - Personal hygiene standards
- UNIT-4 Asepsis
 - Concepts
 - Medical and surgical asepsis, barrier methods
 - Hand washing techniques: Medical and surgical
 - Personal protective equipment: types, uses, techniques of wearing & removal

BVHS – 103 Fundamentals of microbiology

UNIT-1

Introductory microbiology: Introduction to and brief of microbiology, scope and relevance of microbiology, modern developments in microbiology, explain the types and methods of sterilization, use and types of microscopes; bright microscope, field microscopy, dark field microscopy, phase contrast microscopy, electron microscopy.

UNIT-2

Morphology and structure of microorganisms: Morphology and structure of bacteria, fungi, actinomycete and algae etc., microscopic examination of microorganisms, preparation of culture media, spread plates, pour plates, types of selective and differential media, separation of pure cultures, principles and uses of microbiology equipment's and instruments.

UNIT-3

Stains used in microbiology: Introduction to stains; importance of stain in microbiology; types of stains in detailed giving example-simple stain differential stain, negative stain, impregnation method; special staining for certain bacteria, bacterial spores, parasites and fungi; principle, procedure, application and result, interpretation of gram staining and ziehl neelsen staining.

Reference book: [*Burton's microbiology for the health science, the science of laboratory diagnosis, C.P Baveja, P.B godkar "A Textbook of Basic and Applied Microbiology" by K R Aneja*]

BVHS-104 Reporting and Documentation in CSSD

- UNIT -1 Scope of practice for CSSD Technician
 - Reporting matrix -methods
 - Importance of maintaining various records
 - Obtaining them from related resources .
- UNIT-2 Records to be maintained by CSSD Technician
 - Essential components of various records and method of documentation and their retrieval
 - Legal implications of electronic medical Records/Electronic Health Records
 - Documentation and maintain proper registers related to CSSD function

BVHS -105-Fundamental of Computers

Unit-1

Introduction to Computers

History of Computer, Generations, Characteristics, Advantages and limitations of Computer, Classification of Computers, Functional Components of Computer, input, Output and Processing, Concept of Hardware and Software, Data & Information. Concept of data storage. Number system. Decimal, Binary, Hexadecimal ASCII.

UNIT-2

Introduction to GUI Based Operating System Basics of Operating system, Basics of DOS & LINUX, The User interface, File and directory management, Windows setting, Control Panel, devices and Printer setting, Using various window commands for desktop.

UNIT-3

Word Processing

Word processing basics, Menu Bar, Opening and closing documents, save & save as, Page setup, print preview, and printing. Text creation and manipulation Editing, cut copy paste. Document creation, editing, Formatting the text – Paragraph indenting, bullets and numbering, changing case, Table manipulation – creation of table, insertion and deletion of cell, row and column.

UNIT-4

Network basics, Internet Basics of computer network LAN, WAN etc, Concept of Internet, Basic of Internet Architecture, Services on Internet Architecture, World wide web and websites, Communication on Internet, Internet Services, Preparing Computer for Internet Access, ISPs and Examples, Internet Access Technologies. Web Browsing, configuring web browser, Popular search engines Downloading and printing web pages. Internet application Basics of E-mail, E-mail addressing, forwarding and searching, Composing

BVHS -106-General English and soft skill

Unit-1 Introduction to English language

- a) Role and significance of English language in the present scenario
- b) English language: its relevance for the Indian industry.
- c) Introduction to listening, speaking, reading, writing and bench marking of the class.

Unit 2: Grammar and usage

Verbs

Determiners

Active Voice and Passive Voice

Tenses

Unit 3:

Letter writing & Notice Writing

Unit 4:

Précis and Report writing

Practical Knowledge

English communication Concept:

- a) About myself, my family and my friends
- b) Let's talk, making conversation, meeting and greeting
- c) My opinions, my likes and dislikes
- d) Life at collage, hostel and workplace: Conversation test

PRACTICALS:

BVHSP-101 –Practical - Anatomy and Physiology

Human anatomy (practical)

Demonstration of

- Study of Human Skeleton parts with skeletal models.
- Study with charts and models of all organ systems mentioned above.
- Microscopic slides examination of elementary human tissues, cells.
- Major organs through models and permanent slides.
- Parts of circulatory system from models.
- Parts of respiratory system from models.
- Digestive system from models.
- Excretory system from models.

Human Physiology (Practical)

- To measure pulse rate
- To measure blood pressure
- To measure temperature
- Measurement of the Vital capacity
- Determination of blood groups
- Transport of food through esophagus
- Calculation and evaluation of daily energy and nutrient intake.
- Measurement of basal metabolic rate
- Demonstration of ECG
- Bile juice secretion and excretion 11. Urine formation and excretion
- Differential Leucocyte count by Peripheral blood smear.

BVHSP-102- Practical - Basic Concepts of HST Technology-1

- Zoning: CSSD & Theatre, Protected zone, Clean zone, Sterile zone
- Maintaining a sterile field : Factors affecting sterile field, Personal hygiene standards
- Asepsis: concepts, medical and surgical asepsis,
- Barrier methods
- Hand washing techniques: Medical and surgical Personal protective equipment: types, uses, techniques of wearing & removal

- Infection control -Infection control, Nosocomial infections (HAI)
- Most frequent sites of infection, Strategies for infection control
- Standard precautions
- Transmission based precautions
- Hospital infection control program (SOP, Protocols)
- Hospital infection committee
- Management of sharps
- Needle stick injury management
- Management of blood and body fluid spillage, Clean environmental surfaces

BVHSP-103- Practical- Fundamentals of Microbiology

- Use of microscope in examination of unstained bacteria, fungi, algae, parasites and stained cell preparations including simple staining, Gram's staining, acid fast staining, capsule staining, spore staining using
- prokaryotic and eukaryotic cells, hanging drop preparation.
- Preparation of culture media, spread plates, pour plates,
- selective media, differential media.
- Separation of pure cultures and study the effect of selective nutrients on prokaryotes
- Isolation of Soil Bacteria, Soil Fungi, Soil Actinomycetes
- Selective media for Soil microflora and use of growth factors, Study of Rhizosphere interactions, Quantitative measurements of Soil nutrients and Rhizosphere microflora and preparation of starter cultures of Rhizobia, Azotobacter.

BVHSP-104 –Practical- Reporting and Documentation in CSSD

- Define the scope of practice for CSSD Technician
- Define reporting matrix and discuss the methods.
- Understand importance of maintaining various records & how to obtain them from related resources
- Explain various types of records to be maintained by CSSD Technician
- Demonstrate essential components of various records and method of documentation and their retrieval
- Understand the legal implications of electronic medical Records/Electronic Health Records
- Develop skill in documentation and maintain proper registers related to CSSD function

BVHSP 105- Practical-Fundamentals of Computer

- Starting MS WORD, Creating and formatting a document,
- Changing fonts and point size,
- Table Creation and operations, Autocorrect, Auto text, spell Check, Word Art, Inserting
- Objects, Page setup, Page Preview, Printing a document, Mail Merge.
- Starting Excel, Work sheet, cell inserting Data into Rows/ Columns, Alignment, Text

- wrapping , Sorting data, Auto Sum, Use of functions, referencing formula cells in other
- formulae , Naming cells, Generating graphs, Worksheet data and charts with WORD, Creating
- Hyperlink to a WORD document , Page set up, Print Preview, Printing Worksheets.
- Starting MS–Power Point, Creating a presentation using auto content Wizard, Blank
- Presentation, creating, saving and printing a presentation, Adding a slide to presentation,
- Navigating through a presentation, slide sorter, slide show, editing slides, Using Clipart, Word
- art gallery, Adding Transition and Animation effects, setting timings for slide show, preparing
- note pages, preparing audience handouts, printing presentation documents, MS-Access,
- Creating tables and database, Internet, Use of Internet (Mailing, Browsing, Surfing).

SEMESTER -2

BVHS -201 Fundamental of Human Anatomy & Physiology-II

UNIT-1

Cardiovascular system: Basic anatomy of heart and important blood vessels Brief introduction about Lymphatic System, The Nervous System: Basic anatomy of brain and spinal cord, meninges and cerebrospinal fluid, Cranial, Endocrine System: Brief anatomy of Pituitary, Thyroid, Parathyroid, Pancreas, Adrenal, Special Senses: Basic anatomy of eye, ear and nose

UNIT-2

Genitourinary system: Basic anatomy of kidney and associated organs, male reproductive organs, female reproductive organs, Respiratory system: Basic anatomy of nose, larynx, trachea, bronchi and lung, Digestive system: basic anatomy of esophagus, stomach, small intestine, large intestine, liver, gall bladder, pancreas

UNIT-3

Cardiovascular system-general arrange, heart, arteries, veins and capillaries, heart structure and function, cardiac cycle, heart sounds, heart rate, blood pressure, mechanism of circulation, definition of hypertension & shock ,Respiratory system: parts of respiratory system, mechanism of respiration, pulmonary function, pulmonary circulation, lungs volume, Gas transport between lungs and tissues, Definition of hypoxia, dyspnoea, cyanosis, asphyxia and obstructive airways diseases Unit, Gastrointestinal physiology: Organs of GIT and their structure & function, secretion, digestion, absorption and assimilation, gastrointestinal hormones, physiology of digestion of carbohydrates, proteins & lipids, Structure & function of liver, spleen, gall bladder & pancreas, Jaundice, Cirrhosis & Pancreatitis.

UNIT-4

Excretory System: Kidneys, Nephron, Mechanism of Excretion, Urine formation (Glomerular filtration and Tubular reabsorption) , Electrolytes: their balances and imbalances Introduction of acidosis and alkalosis , Muscle nerve physiology, types of muscles, their gross structural and functional difference with reference to properties ,Nervous system- general organization of CNS, function of important structure and spinal cord, neuron, nerve impulse, type of nerves according to function, Autonomic nervous system organization & function Special senses-general organization & functions, Endocrine System: Brief introduction about endocrine glands and their secretion, common endocrinological disorder such as diabetes mellitus, hyper & hypothyroidism, dwarfism, gigantism, tetany. Reproductive System: male & female reproductive organs, sex hormones, secondary sexual characteristics, puberty, spermatogenesis, oogenesis, menstrual cycle, pregnancy, menopause, contraceptive measures.

BVHS-202 Introduction to hospital policies and procedures

- UNIT -1 Hospital
 - Organization
 - Functions and Types of Hospital
 - Policies and procedures
 - Various hospital departments
 - Structure and physical set up of hospital.
- Unit 2
 - Admission, Admission Procedures, Steps, Types
 - Discharge ,Discharge Procedure, Types .

BVHS-203 Infection control in CSSD

- UNIT -1 Central Service Processes
 - Cause of concern
 - Protection from pathogens
 - Principal of Asepsis
 - Personal Hygiene and Attire
 - Techniques of self grooming and maintenance.
- UNIT-2 Hand Hygiene
 - Infection Control/Exposure Control/ PPE
 - Elements of transmission and chain of infection - Causative agent, Reservoir/ Source, Portal of exit, Susceptible Host
 - Managing the environment to manage the spread of bacteria
 - Techniques of use of PPE
- UNIT 3 Occupational Safety and Health Administration
 - Environmental concerns in central service areas – Physical Design, Work Area Cleanliness
 - Other Environmental Cleanliness Requirements.

BVHS -204 Medical Terminology

- Unit 1 Importance of Medical Terminology
 - The health care profession
 - Understanding
 - the Operating Room
 - Providing Quality of service to the patient
 - Medical Terminologies relevant to CSSD
- Unit 2 Anatomy of a Medical Term
 - Medical Terminologies from Minimally invasive surgeries to open procedures
 - Equipment and Medicines in Crash cart
 - Equipment in Instrument trays.

BVHS-205 OT Instrumentation

- Unit 1: Surgical Instruments
 - Important role of instrument selection and inspection
 - Instrument Management Process
 - Classification and over view of surgical instruments:
 - Hemostatic Forceps
 - Needle Holders
 - Tissue Forceps
 - Dressing Forceps
 - Retractors, Scissors
 - Suction Devices
 - Single and Double Action Ronguers
 - Kerrison / Laminectomy Ronguers
 - Nail Nippers
 - Graves Vaginal Speculum
- Unit 2 : Complex Surgical Instruments
 - Power Surgical Instruments
 - Endoscopes – Flexible, Rigid, Semi-rigid
 - Endoscopic and Robotic Instrumentation
 - Endoscope regulations and guidelines
 - Care and handling
 - Endoscope Camera Care and Handling
 - Endoscope Repair
 - Staff Education
- Unit 3 : Instrument Management
 - Preliminary Checking
 - Post Operative Care of Instruments
 - Solutions that damage instruments
 - Instruments sharpness testing and identification
 - Instrument identification Methods
 - Instrument Lubrication
 - Loaner Instrumentation.

BVHS-206 Basic of Health Market and Economy

Unit I

Health Care Market an Introduction: Main Problems in the Market for Health Care, Health Care and Economic Basics, Analysing Health Care Markets. Demand-Side Considerations: Demand for Health and Health Care, Market for Health Insurance

Unit II

Supply-Side Considerations: Managed Care, Health Care Professionals, Hospital Services, Confounding Factors Public Policy in Medical Care: Policies to Enhance Access, Policies to Contain Costs, Medical Care Systems Worldwide,

UNIT-III

Health Sector in India: An Overview Health Outcomes; Health Systems; Health Financing

Evaluation of Health Programs Costing, Cost Effectiveness and Cost-Benefit Analysis; Burden of

Diseases, Role of WHO, Health Care Budget: purpose, types & practices in Indian context.

UNIT-IV

Health Economics: Fundamentals of Economics: Scope & coverage of Health Economics, demand for Health Sciences; Health as an investment, population, Health & Economic Development.

Tools of Economics-Concepts of need, demand, supply & price in Health Services.

Methods & Techniques of Economic Evaluation of Health Programmes: Cost benefit & cost-effective methods-output & input analysis.

Market, monopoly, perfect & imperfect competition. Health Financing from various sources – Public, Private, TPA.

Economics of Health Programmes for Nutrition, diet & population control, economics of abuse of tobacco & alcohol, environmental influences on health and feeding.

Economics of Communicable (STDs & Malaria) & non-communicable (IHD & Cancers) diseases.

PRACTICALS:

BVHSP-201-Practical-General Human Anatomy & Physiology-II

Human Anatomy-II (Practical)

Demonstration of:

- Nervous system from models.
- Structure of eye and ear
- Structural differences between skeletal, smooth and cardiac muscles.
- Various bones
- Various joints
- Various parts of male & female reproductive system from models

Human Physiology- II (Practical)

- To perform total platelet count.
- To perform bleeding time.
- To perform clotting time.
- To study about CSF examination.
- To study about intrauterine contraceptive devices.
- To demonstrate microscopic structure of bones with permanent slides.

- To demonstrate microscopic structure of muscles with permanent slides.

BVHSP-202 - Practical- Introduction to hospital policies and procedures

- Hospital : Organization, Functions, Types
- Policies and procedures , Various hospital departments
- Structure and physical set up of hospital.
- Admission, Admission Procedures, Steps, Types
- Discharge ,Discharge Procedure, Types .

BVHSP-203 – Practical -Infection control in CSSD

- Central Service Processes-Cause of concern
- Protection from pathogens
- Principal of Asepsis
- Personal Hygiene and Attire
- Techniques of self-grooming and maintenance,
- Hand Hygiene: Infection Control/Exposure Control/ PPE
- Elements of transmission and chain of infection - Causative agent, Reservoir/ Source, Portal of exit, Susceptible Host, Managing the environment to manage the spread of bacteria
- Techniques of use of PPE
- Occupational Safety and Health Administration
- Environmental concerns in central service areas – Physical Design, Work Area Cleanliness, Other Environmental Cleanliness Requirements.

BVHSP 204-Practical - Medical Terminology

- Importance of Medical Terminology - The health care profession
- Understanding the Operating Room
- Providing Quality of service to the patient
- Medical Terminologies relevant to CSSD
- Anatomy of a Medical Term
- Medical Terminologies from Minimally invasive surgeries to open procedures
- Equipment and Medicines in Crash cart, Equipment's in Instrument trays.

BVHSP - 205 – Practical - OT Instrumentation

- Important role of instrument selection and inspection
- Instrument Management Process
- Classification And over view of surgical instruments- Hemostatic Forceps, Needle Holders, Tissue Forceps, Dressing Forceps, Retractors, Scissors, Suction Devices, Single and Double Action Ronguers, Kerrison / Laminectomy Ronguers, Nail Nippers, Graves Vaginal Speculum
- Power Surgical Instruments
- Endoscopes – Flexible, Rigid, Semi-rigid, Endoscopic and Robotic Instrumentation
- Endoscope regulations and guidelines, Care and handling
- Endoscope Camera Care and Handling
- Endoscope Repair
- Staff Education.
- Preliminary Checking
- Post-Operative Care of Instruments
- Solutions that damage instruments

- Instruments sharpness testing and identification
- Instrument identification Methods, Instrument Lubrication
- Loaner Instrumentation

2 ND YEAR

III SEMESTER

BVCSSD-301 Sterilization Techniques 1

- Unit 1 High Temperature Sterilization
 - Factors that impact sterilization
 - Anatomy of steam sterilizer, Types, Steam Sterilizer Cycles, Advantages.
- Unit 2 Basic work practices
 - Preparing Devices and packs for sterilization, Loading a sterilizer
 - Controlling wet packs, Extended sterilization cycles
 - Sterilization Quality Control
- Unit 3 Sterilization equipment functions
 - Guidelines & policies
 - Preparation of sterilization equipment
 - Operating system of sterilizer
 - Unloading & releasing sterilized loads
 - HSE procedures
 - Quality management requirements compilation.

BVHS -302 Regulations and Standards in CSSD

- Unit 1 Regulatory Agencies – US Food and Drug Administration
 - Centre for Disease Control and Prevention
 - US Department of Transportation
 - US Environmental Protection Agency
 - Occupational Safety and Health Administration
 - Centres for Medicare and Medicaid Services
 - State Regulatory Agencies.
- Unit 2 Professional Associations
 - Association for Advancement of Medical Instrumentation
 - American National Standards Institute
 - International Standard Organizations
 - The Joint Commission
 - National Fire Protection Association

BVHS-303 Monitoring in CSSD

- Unit-1 General Monitoring
 - Decontamination Area Monitoring – Water Quality
 - Mechanical Cleaning Equipment.
- Unit 2 High Level Disinfection Monitoring
 - Chemical Disinfection Monitoring
 - Manual Disinfection
 - Automated Endoscope
 - Repressor Monitoring.
- Unit 3 Sterilization Monitoring
 - Process Indicators
 - Physical Monitoring
 - Biological Indicators
 - Process Challenge devices, Implants
- Unit 4 Sterilizer Specific Monitoring
 - Dynamic Air Removal Sterilizers

- Gravity Sterilizers
- Immediate use steam sterilizers
- Multiple cycle testing
- Tabletop Steam Sterilizers
- Hydrogen Peroxide Sterilizers.

BVHS - 304 CSSD Technology I

- Unit 1 Decontamination of work area
 - Design and location of the decontamination area
 - Dress code and personal behaviours
 - Work Setup, Cleaning Tools
 - Steps in the process of decontamination
 - Cleaning methodologies
- Unit 2 Disinfection
 - Introduction to disinfectants
 - Types of disinfectants
 - Safe work practices when performing manual disinfection
 - Quality assurance for disinfection
- Unit 3 Assembly and Packaging
 - The physical environment
 - Dress code and behaviour
 - Pack Preparation - Goals, Guidelines, Procedures
 - Disposable Packing Materials
 - Wrapping Techniques
 - Methods of Pack Closure, Pack Labelling, Special Packing Concerns.

BVHS-305 Advance Computing Skills

Unit-1

Advance Word Processing Tools Setting the layout of Table and documents, Mail merge techniques. Letter envelopes etc., Using spell check and Thesaurus, Foot note nad Endnotes, Using Charts, shapes and pictures in word.

Unit-2

Basics of Spreadsheet Functions of Spreadsheet, Applications, Elements of Electronic Spread sheet, creating document saving and printing the worksheet, manipulation of cells, Functions and charts, using formulas, Functions and charts

UNIT-3

Advance Spreadsheet Tools

Manipulations with charts and its types, Sorting, Filtering of data, Pivot table, data validation techniques. Grouping and subtotalling of data. Text to column option. Printing of customized worksheet.

UNIT-4

Presentation Software

Using PowerPoint, Opening an PowerPoint presentation, Saving a presentation, Entering and editing text, inserting and deleting slides in a presentation, preparation of slides, adding clip

arts, charts etc., Providing Aesthetics, Enhancing text presentation, working with color lines styles and movie and sound, adding header and footer, presentation.

BVHS-306 Human Values & Professional Ethics

UNIT-1

Need, Basic Guidelines, Content and Process for Value Education Understanding the need, basic guidelines, content and process for Value Education Self-Exploration its content and process, Natural Acceptance' and Experiential Validation- as the mechanism for self-exploration Continuous Happiness and Prosperity- A look at basic Human Aspirations

Right understanding, Relationship and Physical Facilities- the basic requirements for fulfilment of aspirations of every human being with their correct priority

Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario

Method to fulfil the above human aspirations: understanding and living in harmony at various levels

UNIT 2:

Understanding Harmony in the Human Being Understanding human being

Understanding the Body as an instrument

Understanding the harmony of Body, correct appraisal of Physical needs, meaning of Prosperity in detail

UNIT 3:

Understanding Harmony in the Family and Society-

Harmony in Human Relationship

Understanding Harmony in the family – the basic unit of human interaction

Understanding values in human-human relationship

Trust and Respect as the foundational values of relationship

Understanding the meaning of trust

Difference between intention and competence. Understanding the meaning of respect

Understanding the harmony in the society (society being an extension of family)

UNIT-4

Natural acceptance of human values

Definitiveness of Ethical Human Conduct

Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order

Competence in professional ethics:

a) Ability to utilize the professional competence for augmenting universal human order

b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,

c) Ability to identify and develop appropriate technologies and management patterns for above production systems.

Case studies of typical holistic technologies, management models and production systems

Strategy for transition from the present state to Universal Human Order:

a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers

b) At the level of society: as mutually enriching institutions and organizations

PRACTICALS

BVHSP-301 –Practical-Sterilization Techniques 1

- High Temperature Sterilization
- Anatomy of steam sterilizer
- Steam Sterilizer Cycles
- Basic work practices- Preparing Devices and packs for sterilization
- Loading a sterilizer
- Controlling wet packs
- Extended sterilization cycles, Sterilization Quality Control
- Sterilization equipment functions - guidelines & policies
- Preparation of sterilization equipment
- operating system of sterilizer
- Unloading & releasing sterilized loads, HSE procedures, quality management requirements compilation.

BVHSP-302 –Practical - Regulations and Standards in CSSD

- Regulatory Agencies – US Food and Drug Administration
- Centre for Disease Control and Prevention
- US Department of Transportation
- US Environmental Protection Agency
- Occupational Safety and Health Administration
- Centres for Medicare and Medicaid Services
- State Regulatory Agencies.
- Professional Associations – Association for Advancement of Medical Instrumentation, American National Standards Institute, International Standard Organizations, The Joint Commission, National Fire Protection Association

BVHSP-303-Practicals - Monitoring in CSSD

- General Monitoring, Decontamination Area Monitoring – Water Quality, Mechanical Cleaning Equipment.
- High Level Disinfection Monitoring – Chemical Disinfection Monitoring
- Manual Disinfection
- Automated Endoscope Repressor Monitoring.
- Sterilization Monitoring – Process Indicators
- Physical Monitoring, Biological Indicators, Process Challenge devices, Implants
- Sterilizer Specific Monitoring
- Dynamic Air Removal Sterilizers
- Gravity Sterilizers, Immediate use steam sterilizers
- Multiple cycle testing
- Table top Steam Sterilizers
- Hydrogen Peroxide Sterilizers.

BVHSP-304 -Practical - CSSD Technology I

- Decontamination of work area - Design and location of the decontamination area
- Dress code and personal behaviours
- Work Setup
- Cleaning Tools
- Steps in the process of decontamination
- Cleaning methodologies
- Disinfection – Introduction to disinfectants
- Types of disinfectants
- Safe work practices when performing manual disinfection
- Quality assurance for disinfection
- Assembly and Packaging – The physical environment
- Dress code and behaviour
- Pack Preparation - Goals, Guidelines, Procedures.
- Disposable Packing Material
- Wrapping Techniques
- Methods of Pack Closure
- Pack Labelling
- Special Packing Concerns.

BVHSP-305- Practical - Advance Computing skills

- Word Processing
- Mail merge techniques
- Using Charts , shapes and pictures in word .
- Basics of Spreadsheet
- document saving and printing the worksheet
- formulas , Functions and charts
- Advance Spreadsheet Tools
- worksheet.

- Presentation Software
- Using PowerPoint working with color lines
- styles and movie and sound presentations.

IV Semester

BVHS-401 Sterilization Techniques II

- Unit 1 Low Temperature Sterilization
 - Basic Sterilization Requirements
 - Safety & guidelines recommendation
 - Ethylene Oxide-Background, Efficacy, Penetration
 - Sterilization cycle and process parameters, safety, packaging, loading and unloading Aeration
 - Sterilization Performance Monitors.
- Unit 2 Hydrogen Peroxide Systems
 - Hydrogen peroxide gas plasma
 - Vaporized Hydrogen peroxide
 - Ozone Sterilization-Efficacy, Penetration, Sterilization cycle and process parameters, safety, Exposure Monitoring, Materials Compatibility, Packaging, loading ozone steriliser
 - Sterilizer performance monitor.
- Unit 3
 - Operating and monitoring of steam autoclave
 - ETO
 - Sonic washer
 - Other sterilizing methods .

BVHS-402 CSSD Technology II

- Unit 1 Point of Use Processing
 - Immediate use of steam sterilization- History, Standards and recommended practices, Procedures
 - Quality control Monitors.
- Unit 2 Point of Use Processing for Heat sensitive devices
 - Low Temperature Disinfection and sterilization process
 - Preparation of devices
 - Quality control monitors for point of use low temperature processes
 - Terminal sterilization

BVHS-403 CSSD Safety and Risk Management Techniques

- Unit 1 General Hazards and Risk Management
 - Ergonomic Concerns
 - Slip and fall concerns,
 - Electric Safety concerns, sharp concerns
 - General Chemical Hazards
- Unit 2 Hazardous Substance Concerns
 - Workplace violence
 - Area specific safety concerns
 - Soiled receiving and decontamination areas
 - Supply receiving, breakout and storage areas

- Surgical service areas.

BVHS-404 Medical Ethics and Patients Care

UNIT 1

Medical ethics

Definition - Goal - Scope Introduction to Code of conduct Basic principles of medical ethics – Confidentiality Malpractice and negligence - Rational and irrational drug therapy

Autonomy and informed consent - Right of patients Care of the terminally ill- Euthanasia Organ transplantation, ethics and law

Medico legal aspects of medical records – Medico legal case and type- Records and document related to MLC - ownership of medical records - Confidentiality Privilege communication - Release of medical information – Unauthorized disclosure - retention of medical records - other various aspects. Professional Indemnity insurance policy

Development of standardized protocol to avoid near miss or sentinel events Obtaining an informed consent

UNIT -2

Hospital structure and organization, Radiography as a profession - professionalism, projecting professional image, professional and personal qualities (both essential and desirable) of the radiographer, Communication and Relational Skills - development of appropriate communication skills with patients, verbal and non-verbal communication, appearance and behaviour of the radiographer, Moving and lifting patients - hazards of lifting and manoeuvring patients, rules for correct lifting, transfer from chair or trolley to couch and vice-versa, safety of both “Lifter” and “the Lifted” must be emphasised. Highlight on handling of geriatric, paediatric and trauma patients.

UNIT -3

Communicable diseases (special reference to AIDS), cross infection and prevention, patient hygiene, personal hygiene, departmental hygiene, handling of infectious patients in the department, application of asepsis, inflammation and infection processes, Patient vital signs - temperature, pulse, respiration and blood pressure - normal values and methods of taking and recording them, Medico-legal considerations - radiographers clinical and ethical responsibilities, misconduct and malpractice ; handling female patients, practice in pregnancy.

UNIT-4

Radiological contrast media - classification, need for radiological contrast media, methods of administration, dosage, reactions to contrast media, role of the imaging department and the radiographer in management of patient with contrast reaction. Basics of emergency care and life support skills Vital signs and primary assessment, Basic emergency care – first aid and triage, Ventilations including use of bag-valve-masks (BVMs), Choking, rescue breathing methods, One- and Two rescuer CPR, Using an AED (Automated external defibrillator), Managing an emergency including moving a patient

BVHS-405 CSSD Instrumentation

- Unit 1 Medical instrumentation
 - Generalized Medical Instrumentation System
 - Alternative Operating Modes
 - Medical Measurement Constraints
 - Classifications of medical Instruments
 - Generalized statistic and Dynamic Characteristics
 - Regulation of Medical Devices
- Unit 2 Care of reusable medical devices and surgical equipment:
 - Safe practices
 - Collection of contaminated items and equipment
 - Sorting and processing of items
 - Decontamination of medical instruments
 - Cleaning process
 - Reuse of single use devices
 - Sterilization of Rubber items/ poly carbon materials
- Unit 3 Preparation, Inspection, assembly, packing and labelling of items for sterilization
 - Packing area preparation
 - Preparation and inspection of items
 - Assembly and packing of items
 - Labelling of items
 - Documentation: Recording and Reporting
 - Management of Theatre Linen/ hospital linen
 - Assessment and classifying theatre linen decontamination of linen
 - Sterilization of linen
 - Folding theatre linen
 - Packing and storage of theatre linen
 - Distribution

BVHS-406 Advance Communication & Soft Skills

UNIT-1

Functional Grammar-II

- a) Application writing
- b) Paragraph writing, essay writing and précis writing
- c) Pre-testing of oral and writing skills

UNIT-2

Professional Skills

- a) Biodata, CV and resume writing
- b) Joining letter, cover letter and resignation letter
- c) Inter- office memo, formal Business letter, informal notes
- d) Minutes of the meeting, reporting events, summary writing

UNIT-3

Presentation skills

- a) Power-point presentations and presenting techniques
- b) Body language
- c) Describing people, places and events
- d) Extempore, speech and just- a minute sessions

UNIT-4

Interview skills

- a) Developing skills to- debate, discussion, basics of GD and styles of GD
- b) Discussion in groups and group discussion on current issues
- c) Steps to prepare for an interview and mock interviews

Public speaking

- a) Art of public speaking
- b) Welcome speech
- c) Farewell speech
- d) Votes of thanks

Oral practice

- a) Debate
- b) Just-a-minute
- c) Group discussion
- d) Mock interviews

PRACTICALS:

BVHSP- 401 - Practical - Sterilization Techniques II

- Low Temperature Sterilization – Basic Sterilization Requirements
- Safety& guidelines recommendation
- Ethylene Oxide - Background, Efficacy, Penetration, sterilization cycle and process parameters, safety
- Packaging, loading and unloading Aeration
- Sterilization Performance Monitors
- Hydrogen Peroxide Systems – Hydrogen peroxide gas plasma, Vaporized Hydrogen peroxide
- Ozone Sterilization-Efficacy, Penetration, Sterilization cycle and process parameters, safety.
- Exposure Monitoring, Materials Compatibility, Packaging
- Loading ozone sterilizer, Sterilizer performance monitor.

- Operating and monitoring of steam autoclave, ETO, sonic washer and other sterilizing methods.

BVHSP-402-Practical- CSSD Technology II

- Point of Use Processing- Immediate use of steam sterilization- Standards and recommended practices
- Procedures
- Quality control Monitors.
- Point of Use Processing for Heat sensitive devices-Low Temperature Disinfection and sterilization process
- Preparation of devices
- Quality control monitors for point of use low temperature processes
- Terminal sterilization

BVHSP-403 –Practical-CSSD Safety and Risk Management Techniques

- General Hazards and Risk Management - Ergonomic Concerns
- Slip and fall concerns
- Slip and fall concerns
- Electric Safety concerns
- Sharp concerns
- General Chemical Hazards
- Hazardous Substance Concerns
- Workplace violence, Area specific safety concerns
- Soiled receiving and decontamination areas, Supply receiving, breakout and

BVHSP-404-Practical Medical Ethics and Patients Care

- law and liability and duties of staff
- Workplace issues
- Bioethical issue
- Care and handling of patient
- Medico legal cases
- emergency care and life support skills
- CPR
- Vital signs and primary assessment
- bag-valve-masks

SEMESTER -V

BVHS-501 Quality assurance in CSSD department

Unit 1 Importance quality assurance and quality control

- Quality in central service department
- Components of quality
- Planning tools and procedures

Unit 2 Quality control indicators

- Quality concerns
- Quality central service procedures
- Quality in central service processing areas- Decontamination area, preparation and packing area
- Quality programme alternatives

BVHS-502 Professional Etiquettes

- Unit 1 Professional Conduct
 - Specific Etiquettes on duty
 - Organizational hierarchy and reporting
 - Legal and ethical issues
- Unit 2 Job responsibility of CSSD Technician
 - Responsibilities of co-workers
 - Best practices in the field while complying with organization conduct
 - Individuals or team compliance with legislation
 - Protocols, guidelines and organisational systems and requirements

BVHS-503 Inventory Control in CSSD

- Unit 1 Inventory
 - Handling Commercially sterilized items
 - Item locator systems
 - Loss of sterile items
- Unit 2 Equipments
 - Accessories in CSSD Department
 - Methods of Inventory control
 - Distribution of supplies – Inventory Replenishment and distribution system Sustainability
 - Role of Central Service in Inventory Management.

BVHS-504 Biomedical Waste Management.

UNIT-1

Introduction to bio medical waste management: definition of bio medical waste management, hazards of bio medical waste and its management, infection control, principles of bio medical waste management.

UNIT-2

Categories of BMW: Different waste category, different types of waste, to manage bio medical waste in the work place, disposal of laboratory waste.

UNIT-3

Color coding: Use of different colors of bags, describe waste management in hospital, need for bio medical waste, history of bio medical waste, problems associated with BMW, waste treatment.

UNIT-4

Bio safety: components of safety in Operation Theater, personal protective equipments, cleaning and disinfecting medical equipments, sterilization basic care of OT.

BVHS-505 :Digital Literacy & Account Literacy

Unit 1:

- Review of MS office
- Advance options in MS excel
- Excel
- Power point
- Introduction to internet learning platform
- Using internet-based learning platform
- Using google and you tube for learning
- Using smart phone to become smart

UNIT-2

- Benefits of digital learning
- Using internet for personal requirement
- Online payments method
- Use of social media for advisement
- Digital security and privacy
- Various cybercrime and their safety guideline
- Best practice for securing online and network transaction
- Managing privacy and security and social media accounts

UNIT-3

- Introduction and basic of financial planning
- Concept of time and value of money
- Risk and return
- Myths about easy money
- Financial planning with examples

- Introduction to financial market and institution investment option in post office
- Sources of finance
- Capital market basics
- Basic of money market
- Mutual funds

UNIT-4

- Life insurance
- General insurance
- Types of banks
- KYC
- Function of commercial banks and RBI and its function
- Deposite accounts-understanding of operation
- Retail finance
- Personal loan
- Corporate banking
- Cheque collecting services
- Payments modes in banking system

BVHS-506 Introduction to National Healthcare System

- UNIT-1 Introduction to healthcare delivery system
 - Healthcare delivery system in India at primary, secondary and tertiary care
 - Community participation in healthcare delivery system
 - Health system in developed countries.
 - Private Sector
 - National Health Mission
 - National Health Policy
 - Issues in Health Care Delivery System in India
- UNIT-2 National Health Programme
 - Background objectives
 - Action plan
 - Targets
 - Operations,
 - Achievements and constraints in various National Heath Programme.
- UNIT-3 Introduction to AYUSH system of medicine
 - Introduction to Ayurveda.
 - Yoga and Naturopathy
 - Unani
 - Siddha
 - Homeopathy
 - Need for integration of various system of medicine
- UNIT-4 Health scenario of India- past, present and future
 - Demography & Vital Statistics-
 - Demography – its concept
 - Vital events of life & its impact on demography
 - Significance and recording of vital statistics
 - Census & its impact on health policy
 - Epidemiology: Principles of Epidemiology
 - Natural History of disease

- Methods of Epidemiological studies
- Epidemiology of communicable & non-communicable diseases, disease transmission, host defense immunizing agents, cold chain, immunization, disease monitoring and surveillance.

PRACTICALS

BVHSP-501 –Practical-Quality assurance in CSSD department

- Quality assurance and quality control
- Quality in central service department
- Components of quality
- Planning tools and procedures
- Quality control indicators, quality concerns
- Quality central service procedures
- Quality in central service processing areas- Decontamination area, preparation and packing area, Quality programme alternatives

BVHSP-502 -Practical- Professional Etiquettes

- Professional Conduct
- Prepare Specific Etiquettes on duty
- Prepare Organizational hierarchy and reporting , Legal and ethical issues
- Prepare Job responsibility of CSSD Technician, Responsibilities of co-workers
- Develop Best practices in the field while complying with organization conduct, Individuals or team compliance with legislation, Protocols, guidelines and organisational systems and requirements

BVHSP -503 -Practical - Inventory Control in CSSD

- Maintaining Inventory
- Handling Commercially sterilized items
- Item locator systems, loss of sterile items
- Equipment-Accessories in CSSD Department
- Methods of Inventory control
- Distribution of supplies – Inventory Replenishment and distribution system,, Sustainability
- Role of Central Service in Inventory Management.

BVHSP-504 -Practical - Biomedical Waste Management.

- Biomedical waste management
- Rules of biomedical waste management
- Categories of biomedical waste
- hazards associated with hospital waste , decontamination of hospital waste
- Segregation
- transportation and disposal of biomedical waste
- Liquid waste, Centralized biomedical waste management facility
- Accident reporting , Issues while handling sharp
- Immediate measure.

BVHSP-505-Practical digital literacy and financial literacy

- Uses Advance options in MS excel
- Excel
- Power point
- Using internet-based learning platform
- Using Google and you tube for learning
- Using smart phone to become smart
- Using internet for personal requirement
- Online payments method
- Use of social media for advisement

VI SEMESTER

BVHS-601 Sterile storage and transportation

- Unit 1 Sterile stock management
 - Sterile stock – storage and transportation
 - Maintain packaging integrity
 - Maintain stock levels
 - Distribution to various units
 - Safe and healthy working environment
- Unit 2 Storage Considerations
 - Location, Space, Storage Considerations
 - Storage shelving ,receipt of storage items
 - In house sterilized items, Purchased pre sterilized items
 - Event related sterility, product life
- Unit 3 Storage/ Transportation Conditions
 - Handling , Basic storage guidelines
 - Stock rotation
 - Transportation – Hand carry, Cart transport, Elevator/Lift ,Transportation guidelines.

BVHS-602 Administration In CSSD

- Unit 1 Administration
 - Definition , Purpose, Techniques
 - CSSD Department Management - Process, Principles, Functions
- Unit 2
 - Planning
 - Organizing
 - Delegating
 - Directing
 - Leadership
 - Communication
 - Supervision
 - Group Dynamics, Controlling, Material Management, Documentation

PRACTICALS:

BVHSP-601 –Practical- Sterile storage and transportation

Demonstrate skill in

- -Identify compromised stock:
- -Incorrectly packed
- -Torn or opened
- -Wet at the end of sterilizing cycle
- -Placed on dirty surfaces
- -No sterilizing indicator
- Occupational hazards/handling sharps/

BVHSP-602 -Practical- Administration In CSSD

Demonstrate skill in

- Administration-Techniques
- CSSD Department Management - Process, Principles, Functions
- Planning
- Organizing
- Delegating
- Directing
- Leadership, Communication, Supervision, Group Dynamics, Controlling, Material Management, Documentation

Bibliography:

1. Sterilization Technology for the health Care Facility from AN ASPEN PUBLICATION.
2. Hand book on Operation Theatre & Asepsis Published by Cochin Ophthalmic Club COC-CME Series 2 , 2013
3. Recommended Guidelines for CSSD Ist Edition Published July 2008, Hospital Sterile Services Association (India)
4. The Guide to Good Manufacturing Practices in National Health Services, Sterile Service Departments ISSM
5. Teaching and Training for Sterile Services Personnel ISSM
6. Introduction to Sterilization and Disinfection by Gardner and Peel 7. Micro Biology, Fifth Edition TATA Mc GRAW- HILL EDITION 1993
7. Hand book on Operation Theatre & Asepsis Published by Cochin Ophthalmic Club COC-CME Series 2 , 2013
8. Proper Maintenance of Instruments 8th Revised Edition,2005 Instrument Preparation working group – Germany
9. Guide to Care and Maintenance of Surgical Instrumentation @1995 Scanlan International ,Inc