

**REGULATIONS AND SYLLABUS
FOR
DIPLOMA IN MANAGEMENT OF CENTRAL STERILE SUPPLY SERVICES**

Offered by

**BHARATHIAR UNIVERSITY, COIMBATORE
FROM 2007-2008**

Under The

**UNIVERSITY INDUSTRY INTERACTION AND
CONSULTANCY SERVICE CENTER (UIICSC)
COLLABORATIVE PROGRAMME**

DIPLOMA IN MANAGEMENT OF CENTRAL STERILE SUPPLY SERVICES

Course Title and Course Description

The course shall be called as the “Diploma in Management of Central Sterile Supply services”. This course is designed to prepare qualified Technician with specialized knowledge in principles of Engineering, Microbiology, and develop desirable skill in applying this concept in sterilizing technique, managing the Gadgets in the CSSD.

The programme will be conducted at a Hospital recognized by the Bharathiar University under the UIICSC collaborative programme. Candidates shall abide by the stipulated timings, discipline, rules and regulations of the hospital to which they will be assigned for the entire course.

REGULATIONS

1. Admission Criteria:

- (a). Any candidate who has passed +2 (Graduates also can apply)
- (b) Both Male and Female aged 17 yrs and above

2. Course Duration:

The duration shall be 12 months Full Time. The candidates admitted to this course would spend at least six hours a day and 30 hours per week in the Bharathiar University Recognized Hospitals.

3. Medium of Instruction:

English shall be the medium of instruction

4. Courses and Scheme of Examination:

Paper No.	Subject	Credit Hours	Max Marks	
			Int.	Ext.
01	Basics of Anatomy and Physiology	6	60	90
02	Applied Microbiology and sterile supply services	6	60	90
03	CSSD Equipment Handling & Maintenance and Fundamentals of Engineering	6	60	90
04	CSSD and Operation Theatre and Microbiology Lab Practical	6	60	90
05	Hospitals Visit at CSSD and Operation Theatre and Microbiology Lab – Internship Project Report	6	60	90

5. Practical Training:

Being practical oriented programs the focus will be more for practical training. The candidate shall undergo a practical training in CSSD and Operation Theater in the Bharathiar University affiliated Hospitals.

6. Requirement to appear for examination:

A candidate should put in a minimum of 80% attendance to be eligible to appear for the examinations.

7. Passing minimum:

To pass

a. A Candidate shall secure a minimum of 50%marks individually in the practical and Theory Examinations. A candidate failing in any one component will have to reappear for that particular component only in the supplementary examination.

b.The Candidate shall secure 50% marks in internals.

8. Classification of successful candidate

A candidate who has secured 75% and above, aggregate in the theory and practical examinations, in the first attempt, shall be deemed to have passed the examinations First class with distinction.

A candidate who has secured 60% and above aggregate in the theory and practical examinations in the first attempt shall be deemed to have passed the examination With First Class.

Other successful candidates shall be declared to have passed the examination in Second Class.

9. Conferment of degree:

A candidate, who has passed all the examinations as prescribed, shall be eligible to receive the “**DIPLOMA IN MANAGEMENT OF CENTRAL STERILE SUPPLY SERVICES**” from the Bharathiar University.

10. Ranking:

Candidates who have passed all the examinations in the very first attempt and secure the first five positions in aggregate marks will be awarded University ranks.

11. Revision of regulations and syllabus:

The syllabus and regulations of the course are subject to modification by the concerned board every 03 year or whenever requires.

12. Question paper pattern:

University examination shall be conducted for 90 marks. The pattern of question paper for all the subject shall be follows:

- Multiple choice / one word answers : 15 x 1 = 15 marks (no choice)
- Short notes (100 words/ one paragraph) : 5x5 = 25 marks (either/or type)
- Elaborate (300 words or 1½ paper) : 5x10 = 50 marks (either/or type)

Award of Internal Assessment Marks

Internal assessment marks for theory will be awarded based on the Marks obtained in the three Internal Assessment Tests. Internal assessment marks for practical will be awarded based on the candidate’s regular performance in the practical area (CSSD) and one practical exam marks.

PAPER 1
BASICS OF ANATOMY & PHYSIOLOGY

OVERALL OBJECTIVE: At the end of the programme the students will be able to understand the basic concepts of Anatomy and Physiology and develop desirable attitude and skill in application of this knowledge while providing care to the patients.

SPECIFIC OBJECTIVES: The students will be able to

- 1) Explain the organization of Human body.
- 2) Describe the location , features and parts of systems of the body
- 3) Understand the function of various systems of the body

Unit: 1

Organization of Human Body: Definition & subdivisions of anatomy, anatomical position and terminology, regions and system of the body, cavities of the body and their contents - Size and shape of cells. Parts of cells, cell division. Tissues of the body, characteristics and function of different types of tissues, types of glands.

Unit: 2

The Skeletal System: Skeleton – Definition axial and appendicular skeleton with names and location of bones - Joints – Types of joints & kinds of movement possible - Muscles – Definition, types of muscles, difference between striated & smooth muscle - Functions of the muscles, bone and joints

Unit: 3

The nervous System: Subdivisions of nervous system, brain - location, external features and functions of brain & spinal cord, location, features, functions of the sense organs

Unit: 4

Cardio Vascular and Respiratory System: The types & structure of blood vessels. Shape, structure of heart, blood supply to heart and functions of cardio vascular system - The name, location of organs of respiration and Physiology of respiration

Unit: 5

Other System of the Body: Name, parts and functions of alimentary canal and accessory organs - Names of endocrine gland – location & features and function of the endocrine glands - Parts and functions of kidney, ureter, bladder and urethra

REFERENCE BOOKS:

1. Anatomy & Physiology - Ross & Wilson
2. Anatomy & Physiology for Nursing and Health Care - Vijaya D. Joshy & Ashelete

PAPER 2
APPLIED MICROBIOLOGY AND STERILE SUPPLY SERVICES

OVERALL OBJECTIVE: At the end of the course the students will be able to acquire knowledge on the basic concepts of Microbiology and Microbes and develop desirable skill and attitude in sterilization and disinfection and other methods of prevention of infection.

SPECIFIC OBJECTIVE: The students will be able to

1. Describe the Morphological features, sources and mode of transmission of various organisms
2. Explain concurrent and terminal disinfection methods
3. Demonstrate skill in disinfection and sterilization of equipments, rubber goods and glasswares
4. Follow the standard precautions to prevent Blood borne infections.
5. Segregate biomedical waste materials and dispose it appropriately

Unit: 1

Organization of Hospital and Functions of various departments - Organization of central sterile supply department – Functions of CSSD – Relationship of CSSD with the operation room, ICU, Emergency room and other wards – Role and responsibilities of CSSD technician

Unit: 2

Definition and importance of Microbiology for CSSD technicians – Classification of Micro organisms – Brief morphological features of Microbes – General properties of Bacteria, Viruses and Fungus

Unit: 3

Definition of Infection – Chain of infection – Sources of Microbes, Routes of Infection, and Mode of spread – Hospital acquired infection and prevention of hospital acquired infection – Immunity and its types

Unit: 4

Sterilization – Definition and classification, Various methods of sterilization, Preparation and sterilization of surgical packs disinfection – definition and classification, methods of disinfection, Principles of cleaning and disinfecting the rubber goods, glasswares, packs, linens, equipments

Special precautions while handling instruments linen and other items used for patients with HIV, HBV or HCV

Unit: 5

Collection and transport of specimen, standard precaution for prevention of Blood bone infection. Bio medical waste segregation and waste management.

REFERENCE BOOKS:

- | | |
|------------------------------|---------------------|
| 1. Microbiology | - Michall J Pelczar |
| 2. General Microbiology | - Hans G. Schlesal |
| 3. Hand Book of Microbiology | - Bisen.P.S |

PAPER 3
CSSD EQUIPMENT HANDLING & MAINTENANCE AND FUNDAMENTALS OF
ENGINEERING

Overall Objective:

At the end of the program the students will be able to understand the working principle of the CSSD Equipments and basics of the Engineering and acquire skills in handling and trouble shooting these gadgets.

Specific Objectives: The students will be able to

1. Explain the principle of sterilizers and sterilization technique.
2. Brief the importance of the sterilizer handling and maintenance.
3. Explain the working principle of various equipments in the CSSD.
4. To know about the basics of the Electricity and apply the knowledge during the Workplace.
5. Troubleshoot the Emergency situation and prevent electrical or fire accidents
6. Maintain the machines in the working condition.

Unit: 1

Introduction to CSSD, Types of Sterilizer, Operating and Maintenance of - Steam Sterilizer (Autoclave (High speed, High pressure 134 C) Autoclave (Low speed, Low pressure 121 C)). Water Quality, Types of water, Types of treating water and Compressed Air - Operating & Maintenance (Preventive, Breakdown and Predictive) of gas sterilizers (ETO sterilizer, Hydrogen peroxide).

Unit: 2

Operating & Maintenance (Preventive, Breakdown and Predictive) of Ultrasonic Cleaner, Operating & Maintenance of washer disinfectant.

Unit: 3

Basic electrical – Voltage, Current, Power, Fuse, Open circuit, Short circuit, Single Phase, Three Phase, Ground, Power factor. Electrical Components – Resistor, Capacitor and Inductor – Basic principle, various types and package, Effect in electrical line, connection (Series circuit connection and Parallel circuit connection) Application of each items.

Unit: 4

Measurement of various electrical parameters – Voltage, Current, Power, Earth Voltage. Electrical power supply – Transformer, Principle, Construction, Different types of Transformers, Working, Various applications.

Unit: 5

Safety Regulations and Quality control – Prevention and Precaution of Electrical Shock and Electrical Fire, Hazardous in gas sterilization, checking efficacy of steam sterilizer, Maintenance of records.

REFERENCE BOOKS:

1. Basics of Electrical Engineering - B.L.Theraja
2. Electronic Devices and Components - Malvino

PAPER 4
PRACTICAL: CSSD, OPERATION THEATRE AND MICROBIOLOGY LAB

Overall Objective:

At the end of the program the students will be able to operate & maintain the Equipments in CSSD in the effective manner. The student shall undergo a practical training in the CSSD, Operation Theater and Microbiology in the Bharathiar University affiliated Hospitals and they will improve their knowledge in handling the CSSD Equipment and Electricity.

Specific Objective: The student will be able to

1. Improve the knowledge for handling the CSSD Equipment
2. Clean, pack and sterilize the articles, dressing materials, surgical trays.
3. Maintain the regular and routine maintenance program for the equipments
4. Handling the emergency situation
5. Identify the safety points during the operating and maintenance of various types of sterilizers.
6. Liaise with operation rooms, emergency rooms, Labour room and wards of the Hospital.
7. Ensure the sterilization quality.

Course Content

Practical:

1. Operating of Steam Sterilizer, Gas Sterilizer, Ultrasonic Cleaner and washer disinfectant.
2. Measurement of Various Electrical Parameters like Voltage, Current, and power.
3. Carry out the Electrical connection of the equipment
4. Trouble shooting the minor Electrical Problems
5. Carry out the Preventive Maintenance Schedule in Steam Sterilizer, Gas Sterilizer, Ultrasonic Cleaner and washer disinfectant.
- 6 Carry out the Predictive Maintenance of Steam Sterilizer, Gas Sterilizer, Ultrasonic Cleaner and washer disinfectant.
7. Attend the Break down Maintenance of Steam Sterilizer, Gas Sterilizer, Ultrasonic Cleaner and washer disinfectant Steam Sterilizer, Gas Sterilizer, Ultrasonic Cleaner and washer disinfectant.
8. To maintain the efficacy of the Sterilizer by using the Microbiological Report and maintain the Record.
9. Assessment of quality of the sterilization.
10. Checking of the water quality (used for sterilizer)
11. Ensuring the safety (both man and materials) in the CSSD (Viva)
12. Special precaution when using the gas sterilizers (Viva).

PAPER 5
HOSPITALS VISIT AT CSSD AND OPERATION THEATRE AND
MICROBIOLOGY LAB

INTERNSHIP PROJECT

Objective:

At the end of the program the students will be able to operate & maintain the Equipments in CSSD in the effective manner and know about the structure of the CSSD in some other Hospital. The student shall undergo a practical training in the CSSD and Operation Theater in the Bharathiar University affiliated Hospitals and they will improve their knowledge in handling the CSSD Equipment and Electricity.

Specific Objective:

1. To improve the knowledge for handling the CSSD Equipment
2. To Maintain the regular and routine maintenance program for the equipments
Handling in the emergency situation
3. To know about the safety points during the operating and maintenance of various types of sterilizers.
4. To understand about the importance of the Microbiology department
5. Understanding of the Microbiological reports for the sterilizers and the sterilization quality.