

**CURRICULUM**

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**Certificate in Dental  
Science (Dental Hygiene)  
(Second and Third year)**

Council for Technical Education and Vocational Training  
**CURRICULUM DEVELOPMENT DIVISION**

**Sanothimi, Bhaktapur**  
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## **Table of Content**

### **Background**

The Government of Nepal has called for the provision of basic health service to all by establishing a network of health services in remote and urban areas. In this regard the Council for Technical Education and Vocational Training (CTEVT) has been contributing towards the development of different level of health personnel. In the field of dental health, CTEVT has planned to produce middle level dental service providers in the form of Dental Hygienist. The Council will award "**Certificate in Dental Science (Dental Hygiene)**" to those candidates who successfully complete the requirements as prescribed by this curriculum. The Certificate in Dental Science (Dental Hygiene) graduates will be able to work as Dental Hygienist in the hospital and clinical settings under the supervision of the Dental Surgeon and also will be able to in the community.

### **Mission of the Curriculum**

To provide the document, which directs and guides affiliated schools and its faculty in the process of providing quality education to the Dental Science (Dental Hygiene) trainees to meet the demand of dental health services in the country

### **Strategy**

The strategies to achieve the mission of educational excellence will be provided by implementing the curriculum, monitoring the basic requirements, maintaining expert faculty, and assessing the students.

### **Philosophy**

The philosophy of this curriculum is based on the development of Dental Science (Dental Hygiene) as a profession for fulfilling the basic dental/oral health care needs of the people with its socio-cultural impact on health. The approach focuses on dental health care and services for better human health. It is based on the code of conduct of Health Professional Council of Nepal.

### **Program Description**

The course is based on the job required to be performed by a Dental Hygienist at different health institutions in the country. The Certificate in Dental Science (Dental Hygiene) program extends over three academic years. The first year focuses on core subjects, the second year focuses on the subjects of dental Science and public health, and the third year focuses on the application of acquired knowledge and skills through comprehensive practices in hospital, and in community settings. The graduates are eligible for registration as Dental Hygienist (Grade-B) in the Health Professional Council of Nepal.

The contents of individual subjects prescribed in the curriculum are incorporated in the light of "must know and must do" principle.

### **Aims and Objectives**

The course aims to produce certificate level Dental Hygienists with sound academic knowledge combined with related technical skills, which can face real life situation at the level they are aimed at. The course enables:

- To prepare technically competent middle level human resource who will demonstrate positive attitude and respect to the profession and to the socio-cultural values
- To develop quality & ethical dental Science practice in the hospitals as well as in the community settings

- To develop the attitude to educate and motivate the patients and community to practice plaque control measures to maintain oral Science
- To acquire the skill to perform diagnosis & dental scaling of common periodontal disease
- To use periodontal instruments for basic periodontal therapy and maintenance of the same
- To develop attitude to impart preventive measures of oral health, especially preventing the periodontal diseases
- To conserve the tooth to the maximum possible extent by maintaining periodontal health & ART procedure.
- To develop an attitude to perform the procedures under full aseptic measures
- To develop attitude to prevent iatrogenic disease, and
- To perform dental X-rays and Photography and refer for final diagnosis to dental surgeon
- To refer the patients who require specialized care to Dental Surgeon / specialist.
- To provide Extended Services.

### **Conceptual Framework**

The course should reflect:

- the need of oral health service in general health care of the patient
- the need of proper oral health care for improving the oral health
- the respect given by the community to oral health professional service
- The development of professionalism in oral health by addressing simple to complex problems associated with oral health.

### **Target Group**

SLC pass candidates

### **Group Size**

Maximum of 40 students in a batch

### **Entry Criteria**

The entry criteria are:

- SLC with 45% in aggregate with English, Science and Mathematics as compulsory subjects
- Pass entrance examination conducted by CTEVT
- Applicant should submit the following documents at the time of application:
  - SLC pass certificate
  - Character certificate
  - Citizenship certificate
- Student quota for different category of students as per the policy of CTEVT.

### **Medium of Instruction**

English and Nepali

### **Course Duration**

The Certificate in Dental Science (Dental Hygiene) program extends over three academic years. An academic year consists of maximum of 39 academic weeks and one academic week consists of maximum of 40 hours.

### **Pattern of Attendance**

Minimum of 90% attendance is required to appear in final examination.

### **Teacher to Student Ratio**

The teacher to student ratio is:

- Overall teacher to student ratio must be 1:10 at the institution level
- Teacher to student ratio for practical demonstration must be 1:10
- Teacher to student ratio for bench work must be 1:5
- 75% of the teachers must be fulltime.

### **Program Coordinator, Teacher and Demonstrator**

The required qualifications of the program coordinator, teacher and demonstrator are:

- The program coordinator / Principal must be a master degree holder in related field or a bachelor degree holder in related field with minimum of 3 years experience in teaching activities
- The teacher must be a bachelor degree holder with minimum 3 years experience in related field
- The demonstrator must have an intermediate level degree in related field with 2 years experience in teaching activities
- For basic science and general subjects the teacher must have a master's degree.

### **Instruction Media and Materials**

The following instructional media and materials are suggested for the effective instruction and demonstration to the trainees:

- **Printed Media Materials** (Assignment sheets, Case studies, Handouts, Information sheets, Individual training packets, Procedure sheets, Performance Check lists, Textbooks etc.).
- **Non-projected Media Materials** (Display, Models, Flip chart, Poster, Writing board etc.).
- **Projected Media Materials** (Opaque projections, Overhead transparencies, Slides etc.).
- **Audio-Visual Materials** (Audiotapes, Films, Slide-tape programs, Videodiscs, Videotapes etc.).
- **Computer-Based Instructional Materials** (Computer-based training, Interactive video etc.).

### **Comprehensive Professional Field Practice**

The details of professional practice and field visit are as follows:

- Duration of 24 weeks
- Comprehensive professional practice should be conducted in hospitals, recognized by Ministry of Health and Population (MOHP)
- There should not be more than 10 students at a time in a single hospital
- During field practice there should be at least one teacher monitoring the trainees (either from hospital facility or training institution).

## **Teaching Learning Methodologies**

The teachings learning methods for Certificate in Dental Science (Dental Hygiene) program will be a combination of several approaches, such as Illustrated/Structured Lecture, Group Discussion, Demonstration, Simulation, Guided practice, Practical experiences, Fieldwork, Laboratory exercise/observation, Hospital visit, Term paper presentation, Project work, Case analysis, Tutoring, Role-playing, Heuristic and other Independent learning.

- Theory: Lecture, Discussion, Assignment, Group work
- Practical: Demonstration, Observation and Self-practice

## **Work Frameworks**

1. Certificate level Dental Hygienist is a dental auxiliary, not being a dentist or a medical practitioner, who does oral prophylaxis, gives instructions in oral Science & preventive dental health.
2. Assists the dental surgeon in chair side work, takes dental x-rays and the help manage dental office on sterilization of instruments, maintenance of equipment/instrument, procurement of materials, maintenance of patient record and appointments.
3. S/he shall work under the supervision of the dental surgeon.
4. However, s/he may do history taking, and examination of teeth, ART, promote dental health through the community dental health program, oral prophylaxis and extended; give oral hygiene instruction & education on preventive dental health in community under the supervision of dental surgeon/specialist.

## **Methods of Evaluation**

### **a. Internal assessment**

- There shall be a transparent evaluation system for each subject both in theory and in practical.
- Each subject will have internal evaluation at regular intervals of 4 months and students must get the feedback about it.
- Weight age of theory and practical marks will be according to the course structure.
- Clinical assessment format must be developed and applied by the evaluators for evaluating student's performance in each subject related to the clinical experience.

### **b. Final examination**

- Weight age of theory and practical marks will be according to the course structure.
- Students must pass in all subjects both in theory and practical to qualify for the certification. If a student becomes unable to succeed in any subject s/he shall appear in the re-examination as organized by the CTEVT.
- Students shall be allowed to appear in final examination only after completing the internal assessment requirements.

**c. Requirement for final practical examination**

- Final practical examinations are evaluated by qualified Dentists
- One evaluator can evaluate not more than 20 students in a day in one practical examination sitting
- Practical examination should be administered in actual situation on relevant subject with the provision of at least one internal evaluator from the concerned or affiliating institute led by external evaluator nominated by CTEVT
- Provision of re-examination is as per the CTEVT policy.

**Pass Marks**

The pass marks for theory and practical examinations are:

- 40% in theory examination
- 60% in practical examination

**Grading System**

The following grading system will be adopted:

- Pass division: Pass aggregate below 65%
- First division: 65% or above
- Distinction: 80% or above.

**Certificate Award**

The Council for Technical Education and Vocational Training will award "**Certificate in Dental Science (Dental Hygiene)**" to the candidate who successfully completes the requirements as prescribed by the Council.

**Registration and Career Path**

- The graduates will be eligible for the position equivalent to non-gazette 1<sup>st</sup> class (technical) as Dental Hygienist or as prescribed designation by the Public Service Commission / Nepal Health Professional Council.
- The graduate is eligible for registration with the Nepal Health Professional Council in the grade as mentioned in the Nepal Health Professional Council Act.
- The graduates will be eligible for Bachelor level education in related field.

## Course structure of Certificate in Dental Science (Dental Hygiene)

### First year

S.N	Subject	Mode		Weekly Hrs	Distribution of Marks						Total Marks
		T	P		Theory			Practical			
					Internal	Final	Time (Hrs)	Internal	Final	Time (Hrs)	
1	English	3	-	3	20	80	3	-	-	-	100
2	Nepali	3	-	3	20	80	3	-	-	-	100
3	Social Studies	2	-	2	10	40	2	-	-	-	50
4	Anatomy & Physiology	3	2	5	16	64	3	8	12	3	100
5	Physics	3	2	5	16	64	3	8	12	3	100
6	Chemistry	3	2	5	16	64	3	8	12	3	100
7	Zoology	3	2	5	16	64	3	8	12	3	100
8	Botany	3	2	5	16	64	3	8	12	3	100
9	Mathematics, Statistics & Computer Application	3	2	5	16	64	3	8	12	3	100
	Total	26	12	38	146	584		48	72		850

### Second Year

S.N	Subject	Mode		Weekly Hrs	Distribution of Marks						Total Marks
		T	P		Theory			Practical			
					Internal	Final	Time (Hrs)	Internal	Final	Time (Hrs)	
1	Dental Anatomy and Physiology	2	2	4	10	40	3	10	40	3	100
2	Dental Materials, Instruments and Assisting	2	2	4	10	40	3	10	40	3	100
3	Basic Periodontology I	4	4	8	20	80	3	20	80	3	200
4	Oral Pathology & Microbiology	3	2	5	10	40	3	10	40	3	100
5	Health Education	1	2	3	10	40	3	10	40	3	100
6	Epidemiology & community diagnosis	2	2	4	10	40	3	10	40	3	100
7	Environmental Health,	2	2	4	10	40	3	10	40	3	100
8	Basic Medical Procedures / First Aid	3	2	5	10	40	3	10	40	3	100
	Total	19	18	37	90	360		90	360		900

**Third Year**

S. No	Subject	Mode		Weekly Hrs	Distribution of Marks						Total Marks
		T	P		Theory			Practical			
					Internal	Final	Time (Hrs)	Internal	Final	Time (Hrs)	
1	Basic Periodontology II	3	5	8	20	80	3	20	80	3	200
2	Food and Nutrition	3	2	5	10	40	3	10	40	3	100
3	Dental Pharmacology	3	3	6	10	40	3	10	40	3	100
4	Health Management	3	2	5	10	40	3	10	40	3	100
5	Dental Radiography and Photography	2	4	6	10	40	3	10	40	3	100
6	Dental Public Health and Jurisprudence	5	2	7	20	80	3	-	-	-	100
	<b>Total</b>	<b>19</b>	<b>18</b>	<b>37</b>	<b>80</b>	<b>320</b>		<b>60</b>	<b>240</b>		<b>700</b>
7	Comprehensive Professional Field Practice				<b>Internal Supervision</b>		<b>Internal Exam</b>		<b>External Exam</b>		<b>Total</b>
	(a) Clinical	40/week 12 weeks			100	100		100		300	
	(b) Community	40/week 12 weeks			100	100		100		300	
					200	200		200		1300	

# **Second Year**

## 2.1 Oral Anatomy & Physiology

**Year: II**

**Theory Total: 74 hrs (2 hrs/week)**

**Practical Total: 74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### Course Description:

The course orients the students to basic knowledge about oral anatomy and physiology. It begins with the introduction of various structures and systems of the head and neck, then focus on oral structures, specifically the teeth. The physiological processes that occur in the oral cavity are also taken into discussion, thus enabling the student to gain knowledge on functioning of the oral structures.

### Objective:

After completion of course the student will be able to:

1. Identify the structures of the head and neck specifically the oral structures and its function and implement the knowledge in their clinical application.
2. Review on facial muscles and describe muscles of mastication.
3. Identify and describe in detail the anatomy, growth and development of the tooth including sequence of eruption and tooth numbering.
4. Describe the physiology of the specific oral structures.
5. List the cranial nerves and discuss relevant ones in detail.

### Unit 1: Introduction

[2]

#### Sub-unit 1: Definition and terminologies

1. Define Anatomy, Histology, Osteology, Embryology and Physiology
2. Explain anatomical terminologies: mesial, distal, buccal, labial, lingual, palatal, occlusal, incisal, dorsal, ventral etc.

### Unit 2: Skeleton system

[20]

#### Sub unit 1: Review of skeleton of head and neck

1. Enumerate and describe the skeleton of cranium
2. Enumerate skeleton of vertebra with emphasis on cervicle vertebra

#### Sub unit 2: Maxilla

1. Describe structure and parts of maxilla
2. List the attachment to the maxilla
3. Describe position and relations of maxilla

#### Sub unit 3: Maxillary sinus

1. Describe anatomy and structure
2. Enumerate functions of maxillary sinus

#### Sub unit 4: Mandible

1. Explain structure and parts of mandible
2. List the attachment to the mandible
3. Describe position and relations of the mandible

**Unit 3: Muscular System** [15]

**Sub unit 1: Review on facial muscles**

1. Enumerate facial muscles
2. List the functions of facial muscles

**Sub unit 2: Muscles of mastication**

1. Enumerate muscles of mastication
2. Describe origin, insertion and relation of muscles of mastication
3. Describe functions of muscles of mastication
4. Describe the role of buccinator & orbicularis oris

**Unit 4: Temporo-mandibular joint** [2]

1. Define T.M.J.
2. Explain Structure of T.M.J. with diagram
3. Describe movements of T.M.J.

**Unit 5: Oral cavity** [7]

1. Explain various parts of oral cavity
2. Describe cheek, palate, floor of the mouth, vestibule, lips
3. Describe tongue, its structure and muscles of tongue
4. Describe taste buds and functions of tongue

**Unit 6: Periodontium** [10]

**Sub unit 1: Gingiva**

1. Describe gingiva and gingival sulcus
2. Explain structure and type of gingiva
3. Explain Clinical feature of Gingiva

**Sub unit 2: Periodontal ligament**

1. Describe periodontal ligament
2. Enumerate fibres of periodontal ligament
3. Explain functions of periodontal ligament

**Sub unit 3: Cementum**

1. Describe cementum
2. Enumerate types and functions of cementum

**Sub unit 4: Alveolar bone**

1. Describe alveolar bone
2. Explain properties and functions of alveolar bone

**Unit 7: Tooth** [5]

**Sub unit 1: Growth and development of tooth**

1. Explain dental lamina & dental papilla
2. Describe tooth bud
3. Describe development of dentition and explain different stages of development

**Sub unit 2: Anatomy of tooth**

1. List and describe the morphological parts of tooth
2. List the structural parts of tooth
3. Write down eruption and exfoliation sequence
4. Differentiate between deciduous and permanent dentition

### **Sub unit 3: Occlusion**

1. Define occlusion
2. Describe development of occlusion

### **Sub unit 4: Tooth numbering system**

1. List the different tooth numbering systems
2. Explain merits and demerits of Zigmondy- palmer System, ADA System, FDI System

## **Unit 8: Physiology of mastication & deglutition [5]**

1. Define mastication
2. Define deglutition
3. Describe physiology of mastication, deglutition
4. Differentiate between infantile swallow and mature swallow

## **Unit 9: Salivary gland [3]**

### **Sub unit 1: Parotid, submandibular and sublingual gland**

1. Describe structure, position of parotid gland
2. Describe structure, position of submandibular gland
3. Describe structure, position of sublingual gland

### **Sub unit 2: Saliva**

1. Define saliva
2. List types of saliva
3. Describe composition of saliva
4. Explain functions of saliva

## **Unit 10: Neurology [5]**

1. Enumerate cranial nerves and their functions
2. Describe course, branches and functions of trigeminal nerve
3. Explain course, branches and functions of facial nerve

## **Practical exercises [74]**

### **Unit 1: Skeleton system**

1. Identify skeleton of the head and neck
2. Identify maxilla and mandible with their parts & attachment

### **Unit 2: Muscular system**

1. Identify facial muscles & muscles of mastication

### **Unit 3: T.M.J**

1. Locate T.M.J.
2. Demonstrate movements of T.M.J

### **Unit 4: Oral cavity**

1. Identify parts of oral cavity
2. Identify taste buds

### **Unit 5: Growth & development of tooth**

1. Identify different stages of development of dentition

2. Identify different stages of development of occlusion
3. Find out the dental age of child

### **Unit 6: Anatomy of Tooth**

1. Identify parts of tooth
2. Differentiate each tooth, deciduous and permanent
3. Draw diagrams of human dentition
4. Perform wax carving of prototypes of permanent teeth

### **Unit 7: Periodontium**

1. Locate different parts of periodontium

## **2.2 Dental Materials, Instruments & Dental Assisting**

**Year: II**

**Theory Total: 74 hrs (2 hrs/week)**

**Practical Total: 74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### **Course Description:**

The course aims to introduce and manipulate various dental materials used in dental practice. Identification of the various dental instruments is also taught to the students so as to facilitate in chair-side assisting to the dental surgeon in clinical setting.

### **Objectives:**

At the end of the course students will be able to:

1. Identify, discuss and manipulate common dental materials
2. Identify common instruments used in dental practice
3. Describe basic maintenance of dental instruments and equipment in the dental operatory
4. Assist a dental surgeon in carrying out dental procedures in clinical setting

### **Unit 1: Introduction & biological consideration of dental materials [9]**

1. Describe and enlist commonly used dental materials
2. Discuss biological requirements of dental materials of dental materials
3. Discuss on hazards from chemicals in dental materials
4. Discuss on importance of disinfection of dental materials
5. Discuss requirement of shelf life and storage of dental materials

### **Unit 2: Gypsum Products [5]**

1. Classify gypsum products and its application in dentistry
2. Describe properties of gypsum products
3. Explain manipulation process of gypsum products
4. Calculate recommended water power ratio
5. Explain process of disinfection of gypsum materials

### **Unit 3: Impression materials [9]**

#### **Sub unit 1: Introduction**

1. Define impression material
2. Classify impression materials
3. Describe desirable properties of impression materials
4. Describe process of disinfection of impression materials
5. Describe the process of transfer of impression materials
6. Describe the process of storage of impression materials

#### **Sub unit 2: Impression compound**

1. Define impression compound
2. Describe ideal requirements of impression compound
3. Explain manipulation process of impression compound

**Sub unit 3: Zinc oxide eugenol impression paste**

1. Describe zinc oxide eugenol impression paste
2. Explain the Manipulation process eugenol impression paste

**Sub unit 4: Alginate**

1. List and explain types of alginate
2. Explain manipulation process of alginate
3. Explain the process of loading alginate in the impression trays
4. Describe the storage of alginate

**Sub unit 5: Elastomeric impression materials**

1. Enumerate and classify elastomeric impression materials
2. Describe silicon based impression material and its manipulation
3. Describe agar impression material and its manipulation
4. Describe storage of elastomeric impression materials

**Unit 4: Composite resins****[2]**

1. Describe composite resins
2. Enlist and explain types of composite resins
3. Manipulation process of composite resins
4. Explain the process of eye protection during light curing

**Unit 5: Dental amalgam****[2]**

1. Describe dental amalgam
2. Classify amalgam
3. Describe composition of dental amalgam
4. Explain manipulation process of amalgam
5. Explain mercury hazard and wastage disposal methods of dental amalgam

**Unit 6: Dental cements****[12]****Sub unit 1: Zinc oxide-eugenol**

1. Describe Oxide-eugenol cement
2. Describe composition of zinc oxide-eugenol cement
3. Explain manipulation process of zinc oxide-eugenol cement

**Sub unit 2: Zinc phosphate**

1. Describe zinc phosphate cement
2. Describe composition of zinc phosphate
3. Explain manipulation process of zinc phosphate

**Sub unit 3: Glass ionomer**

1. Describe glass ionomer cement
2. Classify glass ionomer cement
3. Describe composition of glass ionomer cement
4. Explain manipulation process of glass ionomer cement

**Sub unit 4: Zinc polycarboxylate**

1. Describe zinc polycarboxylate cement
2. Describe composition of polycarboxylate cement
3. Explain manipulation process of polycarboxylate cement

**Sub unit 5: Calcium hydroxide**

1. Describe calcium hydroxide cement
2. Describe types of calcium hydroxide cement

3. Describe composition of calcium hydroxide cement
4. Explain manipulation process of calcium hydroxide cement

**Unit 7: Dental waxes** [5]

1. Describe dental waxes
2. Enlist & explain types of dental waxes
3. Explain manipulation process of modeling wax

**Unit 8: Dental models, cast and die materials** [5]

1. Describe dental models, cast & die materials
2. Enlist different dental materials used for making model, cast & die
3. Discuss manipulation process of dental plaster, dental stone and die stone
4. Describe laboratory process of pouring of cast
5. Describe laboratory process of base forming of cast

**Unit 9: Dental instruments** [5]

**Sub Unit 1: Identification of instruments**

1. Describe and classify dental instruments
2. Discuss the identification of common diagnostic, restorative, endodontic, prosthodontic, orthodontic and oral surgery instruments

**Sub Unit 2: Impression Trays**

1. Describe and classify impression trays
2. Identify various types of impression trays
3. Discuss the methods of sterilization of impression trays

**Unit 10: Dental assisting** [10]

**Sub unit 1: Dental chair**

1. Enlist and identify various parts of dental chair and their functions
2. Demonstrate the operation of dental chair units into various positions

**Sub unit 2: Chair-side assisting**

1. Demonstrate various positions of the operator and the assistant
2. Describe various steps of patient preparation before operative procedure
3. Describe patient preparation in special situations including the case of child patient, handicapped patient, apprehensive patient, medically compromised patient, pregnant patient etc.
4. Describe role of dental assisting in special situations including medical emergencies
5. Describe role of dental assisting in special situation like choking, or aspiration of dental instruments/materials by the patient
6. Describe post treatment instructions after various dental procedures

**Sub unit 3: Saliva control and isolation**

1. Enlist different methods of saliva control & isolation
2. Describe use of suction machine for saliva control
3. Describe application of rubber dam for isolation of tooth
4. Prepare cotton roles for saliva control

**Unit 11: Maintenance of dental equipment and instruments** [10]

**Sub unit 1: Cleaning**

1. Demonstrate cleaning of dental chair

2. Demonstrate cleaning of dental equipment including suction apparatus, amalgamator, scaling machine, autoclave, light cure machine, compressor etc.
3. Describe disinfection of water pipe, handpiece chord, drainage system of dental chair unit

#### **Sub unit 2: Maintenance and servicing of dental equipment**

1. Describe air servicing of dental chair unit
2. Demonstrate oiling/lubrication of dental chair unit and compressor
3. Demonstrate oiling and storage of handpiece unit
4. Demonstrate changing of cartridge of handpiece unit
5. Demonstrate changing of bulb and cleaning of illumination panel
6. Demonstrate changing of fuse wire of various electrical dental appliance

#### **Sub unit 3: Sterilization of dental instruments**

1. Define sterilization
2. Enlist different methods of sterilization
3. Describe the process of sterilization and disinfection of various dental instruments
4. Describe sterilization dental handpiece

#### **Sub unit 4: Dental waste disposal**

1. Define waste disposal
2. Discuss the types of biological waste products in the dental operator
3. Explain mercury waste in the dental operator
4. Discuss the process of various biological and physical waste in the dental operator

### **Practical Exercises**

[74]

#### **UNIT 1: Instrument Identification**

1. Identify Instruments used during Diagnostic procedure
2. Identify Instruments used during restorative procedure
3. Identify Instruments used during endodontic procedures
4. Identify Instruments used during scaling and root planning
5. Identify Instruments used during Prosthodontic procedures
6. Identify Instruments used during minor surgical procedures

#### **UNIT 2: Gypsum Products**

1. Identify different types of Gypsum Products
2. Manipulate and store Gypsum Products
3. Cast models dies fabrication

#### **Unit 3: Inelastic Impression materials (Rigid)**

1. Identify impression compound and zinc oxide eugenol paste
2. Manipulate and store impression compound and zinc oxide eugenol paste

#### **Unit 4: Elastic Impression materials**

1. Identify alginate
2. Manipulate and store alginate

#### **Unit 5: Direct filling Resins**

1. Identify different types of composite filling materials
2. Manage shade selection for composite Restoration

## **Unit 6: Dental amalgam**

1. Identify dental amalgam
2. Manipulate amalgam for restoration
3. Manage dental mercury hazard and waste disposal methods

## **Unit 7: Dental cements**

1. Identify different cements used for dental procedures
2. Manipulate and store different cements used for dental procedures

## **Unit 8: Cavity liners, bases and varnish**

1. Identify materials used as Cavity liners, bases and varnish
2. Manipulate and store materials used as Cavity liners, bases and varnish

## **Unit 9: Dental waxes**

1. Identify different waxes and their uses

## **Unit 10: Instruments**

1. Identify and differentiate between trays used for removable and complete denture fabrication

## **Unit 11: Isolation, Sterilization and Maintenance**

1. Identify retraction cord, rubber dam and saliva ejectors
2. Prepare cotton rolls
3. Demonstrate different methods of sterilization of instruments and
4. Manage maintenance of sterilization by visiting sterilization unit of hospital

## **Unit 12: Dental Assisting**

1. Identify different part of dental chairs and list its functions
2. Assist the operator in proper way during different dental procedures

## **MATERIALS AND EQUIPMENTS**

1. Identify different materials and equipments used for various dental procedures
2. Identify types of Gypsum products like dental plaster, dental stone, die stone
3. Identify and use mixing spatula and rubber bowl for mixing dental plaster
4. Identify impression compound and zinc oxide eugenol paste
5. Manipulate impression compound
6. Identify and use mixing spatula and glass slab for manipulating zinc oxide eugenol
7. Identify alginate impression material
8. Identify and use mixing spatula and rubber bowl to manipulate alginate
9. Anterior and posterior composite filling materials
10. Shade guide
11. Etching and bonding agents
12. Amalgam power
13. Mercury
14. Motor and pestle
15. Piece of cloth
16. Amalgam carrier
17. Dampen disc

18. Dental cements like Glass ionomer, zinc phosphate, zinc polycarboxylate, calcium hydroxide
19. Cement spatula
20. Glass slab
21. Dental waxes like Modeling wax, green sticky wax
22. Impression trays
23. Retraction cord, rubber dam and saliva ejectors
24. Cotton
25. Dental chairs

## 2.3 BASIC PERIODONTOLOGY 1

**Year: II**

**Theory Total: 148 hrs (4 hrs/week)**

**Practical Total: 148 hrs (4 hrs/week)**

**Full Marks: (Th. 100 + Pr. 100)**

**Pass Marks: (Th. 40 + Pr. 60)**

### Course Description

The course introduces the students to basic knowledge and skill necessary to use plaque control measures on patients; educate and motivate them for maintaining oral Science. It teaches the students to identify and use of periodontal instruments for scaling, and maintenance of periodontal instruments, then refer the conditions which require specialized dental care.

### OBJECTIVES

On completion of the course the learner will be able to:

1. Acquire knowledge and skill to perform various plaque control methods and use of oral Science aids on patients in clinical setting and in the community
2. Describe periodontal health, and determinants of periodontal disease
3. Record various gingival and periodontal indices
4. Identify and use periodontal instruments with manual dexterity
5. Perform dental scaling using manual instruments
6. Maintenance of periodontal instruments
7. Refer the patients who require further treatment

### Unit 1: Introduction:

[8]

1. Define Periodontology / Periodontics
2. Describe Periodontium
3. Discuss historical background of Periodontology
4. Discuss scope of Periodontics

### Unit 2: Normal Periodontium

[30]

#### Sub unit 1: Gingiva

1. Define gingiva
2. Describe normal clinical features of gingiva
3. Describe normal microscopic features of gingiva
4. Describe gingival connective tissue & gingival fibres with illustrations
5. Discuss development of gingival sulcus
6. Discuss renewal of gingival epithelium
7. Explain blood supply, lymphatic drainage and nerve supply of gingiva
8. Explain correlation of normal clinical and microscopic features of gingiva

#### Sub unit 2: Periodontal ligament

1. Define periodontal ligament
2. Enlist periodontal ligament fibres with illustrations
3. Describe various cellular elements & ground substance
4. Discuss functions of periodontal ligament

#### Sub unit 3: Cementum

1. Describe cementum and its structure

2. Classify cementum and enlist types of cementum
3. Discuss cemento-enamel junction
4. Discuss thickness of cementum
5. Discuss cementum resorption and repair
6. Describe ankylosis

**Sub unit 4: Alveolar process**

1. Define alveolar process and describe its structure
2. Describe cells, intercellular matrix
3. Describe bone marrow, periosteum and endosteum in alveolar process
4. Describe socket wall, interdental septum
5. Describe normal osseous topography of alveolar bone
6. Explain fenestration and dehiscence
7. Describe remodeling of alveolar bone
8. Describe physiologic migration of the teeth
9. Describe occlusal forces and the periodontium
10. Explain blood supply, venous & lymphatic drainage

**Sub unit 5: Defense mechanism in periodontal health**

1. Discuss role of epithelium
2. Describe gingival crevicular fluid in defense mechanism of oral cavity
3. Explain role of saliva and its function

**Unit 3: Classification and epidemiology of periodontal disease** **[20]**

**Sub unit 1: Classification of periodontal disease**

1. Classify gingival and periodontal diseases as described in World Workshop on Periodontal Health 1989
2. Classify gingival and periodontal diseases as described in World Workshop on Periodontal Health 1999
3. Discuss advantage and limitations of World Workshop classification

**Sub unit 2: Epidemiology of periodontal disease**

1. Define epidemiology, incidence, index
2. Discuss epidemiology of periodontal disease
3. Discuss prevalence and incidence of periodontal disease
4. Enlist indices used in periodontics
5. Describe Periodontal index
6. Describe Gingival index
7. Describe Oral Science index
8. Describe CPITN

**Unit 4: Etiology of periodontal disease** **[30]**

**Sub unit 1: Dental plaque**

1. Define dental plaque
2. Describe structure and composition of dental plaque
3. Discuss formation of dental plaque
4. Describe structure and physiologic properties of dental plaque
5. Discuss role of dental plaque in periodontal disease

**Sub unit 2: Periodontal microbiology**

1. Discuss microbiology of dental plaque
2. Discuss association of plaque microorganisms with periodontal disease

3. Discuss microbial specificity of periodontal disease
4. Discuss criteria for identification of periodontal pathogens
5. Discuss virulence factor of periodontal pathogens
6. Discuss colonization and invasion of periodontal tissues
7. Discuss mechanism of host tissue damage

#### **Sub unit 3: Host response**

1. Discuss mechanism of inflammatory cell response
2. Discuss role of mast cells, neutrophils, macrophages, lymphocytes, plasma cells
3. Discuss role of antibody, complement, cytokines and immune mechanisms

#### **Sub unit 4: Dental calculus**

1. Define and classify dental calculus
2. Describe composition of dental calculus
3. Describe mechanism of formation of dental calculus
4. Describe mechanism of attachment of calculus to tooth surface
5. Explain theories regarding the mineralization of calculus
6. Etiologic significance of dental calculus

#### **Sub unit 5: Local deposits and its role in oral Science**

1. Describe materia alba
2. Describe dental stain
3. Describe food debris

#### **Sub unit 6: Role of iatrogenic factors**

1. Explain role of margin of restoration, contact point, surface roughness, overhanging restoration, tooth contours
2. Explain role faulty dental materials and design of dentures
3. Explain periodontal problems associated with faulty orthodontic treatment

#### **Sub unit 7: Role of local factors**

1. Describe role of unrestored missing teeth
2. Describe role of mouth breathing
3. Describe role of tongue thrusting
4. Describe effect of bruxism
5. Describe effect of tooth brush trauma
6. Describe effect of chemical irritation
7. Describe effect of radiation

#### **Sub unit 8: Influence of systemic disease on oral health**

1. Explain influence of nutritional deficiencies on periodontium
2. Explain influence of endocrine disease on periodontium
3. Explain influence of hematological disease on periodontium
4. Explain influence of immunological disorders on periodontium
5. Explain influence of cardiovascular disease on periodontium
6. Explain influence of psychosomatic disorders on periodontium

#### **Sub unit 9: AIDS and periodontium**

1. Discuss oral and periodontal manifestations of HIV infection
2. Discuss oral hairy leukoplakia
3. Discuss oral candidiasis
4. Discuss Kaposi sarcoma
5. Discuss bacillary angiomatosis
6. Discuss oral hyperpigmentation
7. Discuss atypical ulcers and delayed healing

8. Discuss HIV gingivitis and periodontitis

### **Sub unit 10: Aging and its effect on Periodontium**

1. Explain general effects of aging
2. Discuss aging related changes in the periodontium
3. Discuss masticatory efficiency in aging
4. Discuss aging and cumulative effects of oral disease

## **Unit 5: Plaque Control**

[30]

### **Sub unit 1: Introduction**

1. Discuss importance of oral Science and its effect on general health
2. Discuss plaque control measures and its significance
3. Classify plaque control methods
4. Explain personal oral Science methods
5. Discuss importance of patient education on plaque control
6. Describe the use of disclosing agents

### **Sub unit 2: Tooth brush & Dentifrice**

1. Describe tooth brush and its types
2. Describe the use of powered tooth brush
3. Describe dentifrices and its composition
4. Describe composition & mechanism of action of fluoridated toothpastes
5. Describe composition & mechanism of action of desensitizing toothpastes
6. Explain various types of tooth brushing methods and their significance in different patients

### **Sub unit 3: Inter-dental cleaning aids**

1. Describe the use of toothpick
2. Describe the use of dental floss
3. Describe the use of inter-dental brushes
4. Describe the use of gum massage / gum stimulator

### **Sub unit 4: Chemical plaque control methods**

1. Describe and classify various chemical plaque control agents
2. Describe mechanism of action of various plaque control agents

### **Sub unit 5: Oral irrigation device**

1. Describe the use of oral irrigation device
2. Describe the use of periodontal pocket irrigation
3. Describe the use of home irrigation devices
4. Describe instruments and medicaments used in oral irrigation

## **Unit 6: Periodontal Instruments & Instrumentation**

[30]

### **Sub unit 1: Periodontal instruments**

1. Describe instrument design and classification
2. Describe various diagnostic instruments
3. Describe various manual periodontal instruments including hoe, files
4. Describe various scalers, curets and root planning instruments
5. Describe sonic, ultrasonic & piezo-electric scalers

### **Sub unit 2: Principles of instrumentation**

1. Describe anatomic descriptions and considerations during periodontal instrumentation
2. Describe patient and operator position
3. Describe instrument grasp
4. Describe establishing finger rests

5. Describe instrument angulations, activation and adaptation
6. Describe various strokes of using manual instruments

### **Sub unit 3: Instrument sharpening**

1. Describe principles and objective of sharpening
2. Describe various sharpening stones and materials
3. Describe sharpening of sickle scalers
4. Describe sharpening of curets

## **Practical Exercises**

[148]

### **Unit 1: Normal Periodontium**

1. Locate gingiva and its normal features
2. Locate gingival sulcus
3. Draw well labeled diagram of gingival fibers
4. Demonstrate clinical features of gingivitis
5. Demonstrate clinical features of gingival recession
6. Draw well labeled diagram of periodontal ligament fibers

### **Unit 2: Classification and epidemiology of periodontal disease**

1. Calculate Periodontal index in a patient
2. Calculate Gingival index in a patient
3. Calculate Oral Science index in a patient
4. Calculate CPITN index in a patient

### **Unit 3: Etiology of periodontal disease**

1. Demonstrate dental plaque using disclosing agent
2. Demonstrate dental calculus in a patient
3. Demonstrate materia alba in a patient
4. Demonstrate dental stain in a patient
5. Demonstrate food debris in a patient

### **Unit 4:**

1. Identify role of margin of restoration, contact point, surface roughness, overhanging restoration, tooth contours on oral Science
2. Identify role faulty dental materials and design of dentures on oral Science
3. Identify periodontal problems associated with faulty orthodontic treatment
4. Identify role of unrestored missing teeth on oral health
5. Identify role of mouth breathing on oral Science
6. Identify role of tongue thrusting on oral Science
7. Identify effect of bruxism on oral Science
8. Identify effect of tooth brush trauma on oral Science
9. Identify effect of chemical irritation on oral Science
10. Identify effect of radiation on oral Science

### **Unit 5:**

1. Identify nutritional deficiencies on periodontium
2. Identify influence of endocrine disease on periodontium
3. Identify influence of hematological disease on periodontium

4. Identify influence of immunological disorders on periodontium
5. Identify influence of cardiovascular disease on periodontium
6. Identify influence of psychosomatic disorders on periodontium
7. Identify oral and periodontal manifestations of HIV infection
8. Demonstrate aging related changes in the periodontium on patient

## **Unit 6: Plaque Control**

1. Demonstrate personal oral Science methods
2. Perform patient education on plaque control
3. Demonstrate the use of disclosing agents

### **Sub unit 1: Tooth brush & Dentifrice**

1. Demonstrate various methods of tooth brushing
2. Demonstrate the use of powered tooth brush
3. Demonstrate the method of preparing dentifrice

### **Sub unit 2: Inter-dental cleaning aids**

1. Demonstrate the use of toothpick
2. Demonstrate the use of dental floss
3. Demonstrate the use of inter-dental brushes
4. Demonstrate the use of gum massage / gum stimulator
5. Demonstrate the use of various chemical plaque control agents

### **Sub unit 3: Oral irrigation device**

1. Demonstrate the use of oral irrigation device
2. Demonstrate the periodontal pocket irrigation
3. Demonstrate the use of home irrigation devices

## **Unit 6: Periodontal Instruments & Instrumentation**

### **Sub unit 1: Principles of instruments**

1. Identify various diagnostic instruments
2. Identify various manual periodontal instruments including hoe, files
3. Demonstrate the use of various scalers, curets and root planning instruments
4. Demonstrate the use of sonic, ultrasonic & piezo-electric scalers

### **Sub unit 2: Principles of instrumentation**

1. Demonstrate patient and operator position in principles of periodontal instrumentation
2. Demonstrate instrument grasp
3. Demonstrate establishing finger rests
4. Demonstrate instrument angulations, activation and adaptation
5. Demonstrate various strokes of using manual instruments

### **Sub unit 3: Instrument sharpening**

1. Identify various sharpening stones and materials
2. Demonstrate sharpening of sickle scalers
3. Demonstrate sharpening of curets

## 2.4 Oral Pathology & Microbiology

**Year: II**

**Theory Total: 111 hrs (3 hrs/week)**

**Practical Total: 74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### Course Description:

This course aims to introduce, describe and familiarize students with the various common pathological conditions related to the oral cavity so that early diagnosis is facilitated and appropriate referral is done. Adequate knowledge on common diseases, infections, their etiology and related microbiology is given due emphasis. Sterilization to prevent diseases and infection control in dental operatory is also taught to the students.

### Objective:

After Completion of course the student will be able to:

1. Identify common oral diseases that afflict the oral cavity.
2. Note suspicious pathological conditions presented for further referral.
3. Describe the microorganisms and how they contribute to the disease process.
4. Explain sterilization and infection control measures that need to be considered to maintain an aseptic clinical setting.

### Unit 1: Oral Pathology

[7]

#### Sub unit 1: Introduction

1. Define pathology
2. Write down concept of disease
3. Describe etiology and pathogenesis of disease
4. Explain disease process
5. Define atrophy, hypertrophy, cell injury, cell death, ulcer, regeneration, necrosis, dysplasia, metaplasia, abfraction etc.

#### Sub unit 2: Inflammation

1. Define inflammation
2. Describe causes and types of inflammation
3. Describe clinical features of inflammation
4. Enumerate and explain cardinal signs of inflammation

#### Sub unit 3: Abscess

1. Define Abscess
2. Explain causes of abscess
3. Enumerate and explain types of abscess
4. Describe clinical features of abscess
5. Describe alveolar abscess
6. Describe periodontal abscess

**Sub unit 4: Space infection**

1. Define Space and enumerate spaces of oro-facial region
2. Describe cellulitis
3. Enumerate common dental space infections
4. Explain Ludwig's angina

**Sub unit 5: Cysts**

1. Define cyst
2. Classify and enumerate common cystic lesions of the oral cavity
3. Describe odontogenic cysts

**Sub unit 6: Tumors**

1. Define Tumor
2. Classify and explain tumors
3. Differentiate benign and malignant tumors
4. Enumerate common maxillofacial tumors
5. Discuss the mode of spread of tumors
6. Differentiate odontogenic & non-odontogenic tumors

**Sub unit 7: Developmental anomalies**

1. Explain development anomalies of tooth
2. Explain development anomalies of oral structures
3. Describe and classify cleft lip and palate
4. Describe incidence and causes cleft lip and palate

**Sub unit 8: Regressive alteration of tooth**

1. Define Attrition
2. Describe causes & clinical feature of attrition
3. Define Abrasion
4. Describe causes & clinical of feature of abrasion
5. Define Erosion
6. Explain causes & clinical feature of erosion

**Sub unit 9: Dental Caries**

1. Define dental caries
2. Explain etiology and clinical feature of dental Caries
3. Describe sequelae of dental caries
4. Describe prevention of dental caries

**Sub unit 10: Diseases of pulp and periapical tissues**

1. Classify diseases of pulp
2. Describe etiology, clinical features and sequelae of pulp
3. Describe etiology, clinical features and sequelae of periapical tissues

**Sub unit 11: Oral Lesion and Conditions**

1. Discuss common oral ulcerations afflicting oral cavity
2. Discuss common oral lesions afflicting oral cavity
3. Discuss in brief about common viral lesions afflicting oral cavity
4. Discuss in brief about common vesiculo-bulous lesions afflicting oral cavity
5. Enumerate and explain various precancerous lesions and conditions

**Sub unit 12: Systemic diseases and their oral manifestations**

1. Discuss oral manifestations of diabetes mellitus
2. Discuss oral manifestations of leukemia, anemia
3. Discuss oral manifestations of syphilis, tuberculosis, AIDS etc.
4. Discuss candidiasis and oral thrush

5. Discuss hepatitis and its types
6. Discuss HIV/AIDS, its prevention, mode of infection and oral manifestations
7. Define infective endocarditis, list down risk factors
8. Describe clinical features & prophylaxis of infective endocarditis

**Unit 2: Microbiology** [5]

1. Define Microbiology
2. Discuss scope and branches of microbiology
3. Discuss contributions of Louis Pasteur, Robert Koch and Socransky
4. Draw well labeled diagram of simple & compound microscope

**Unit 3: Micro-organisms** [10]

**Sub unit 1: Introduction**

1. Describe Bacteria with diagram
2. Describe Virus with diagram
3. Describe Fungi with diagram
4. Describe Protozoa with diagram
5. Describe Amoeba with diagram
6. Describe Helminthes with diagram

**Sub unit 2: Morphology and structure of micro-organisms**

1. Describe morphological form and structure of bacteria
2. Explain spore and capsule of bacteria
3. Describe morphology & structure of virus

**Sub unit 3: Growth and multiplication of bacteria**

1. Explain growth and multiplication of bacteria
2. Describe factors affecting growth of bacteria
3. Discuss cultivation of microbes
4. Write short notes on culture media

**Unit 4: Infection** [2]

1. Define infection
2. Name the sources and types of infection
3. Describe clinical features and sequelae of infection

**Unit 5: Oral Microbiology** [10]

1. Discuss oral microbiology
2. Discuss normal oral flora of human being from birth to old age
3. Describe micro-organisms in relation to dental caries
4. Describe micro-organisms in relation to periodontal disease
5. Enumerate microorganisms causing contamination and disease related to dentistry

**Unit 6: Sterilization** [5]

**Sub unit 1: Infection control**

1. Define infection control
2. Enumerate and explain various levels of infection control
3. Define sterilization
4. Define disinfection
5. Describe antiseptic and asepsis with example

**Sub unit 2: Different methods of Sterilization**

1. Classify and explain different methods of sterilization
2. Describe Physical methods of sterilization including dry heat, moist heat, gas, vapor and radiation sterilization
3. Describe boiling and autoclaving methods of sterilization
4. Describe chemical methods of sterilization including alcohol, gluteraldehyde and chlorine compounds
5. Explain fumigation procedure
6. Explain Safety factors

**Sub unit 3: Universal precaution**

1. Define universal precaution
2. Describe procedures followed in universal precaution

**Sub unit 4: Hand scrubbing**

1. Explain process of hand scrubbing in operatory with their significance

**Sub unit 5: Self protection**

1. Describe self protection in operatory
2. Explain process of wearing face mask, gloves and gowns with their clinical significance

**Sub unit 6: Decontamination**

1. Explain process of decontamination of gloves, linens and surgical drapes
2. Decontaminate process of decontamination of dental equipment and instruments including dental chair, handpiece, suction apparatus, x- ray films etc.

**Unit 7: Clinical waste management****[5]**

1. Explain clinical waste
2. List and explain the types of waste management
3. Discuss clinical wastes of dental operatory
4. Explain procedure of waste management of dental operatory
5. Explain dental amalgam waste management

**Practical****[74]****Unit 1: Oral Pathology****Sub unit 1: Introduction of pathology**

1. Write diseases cycle and terminologies with figure

**Sub unit 2: Tumors**

1. Identify Benign and Malignant Tumors

**Sub unit 3: Developmental anomalies**

1. Identify Development anomalies of Tooth
2. Identify Development anomalies of oral structures
3. Identify Cleft lip and palate

**Sub unit 4: Regressive alteration of tooth**

1. Identify attrition, abrasion and erosion

**Sub unit 5: Dental Caries**

1. Write the stages of Dental Caries
2. Dental caries triangle

**Sub unit 6: Oral Lesion and Conditions**

1. Identify Oral Cancer

2. Identify Precancerous lesion and conditions

## **Unit 2: Oral Microbiology**

### **Sub unit 1: Introduction**

1. Draw well labeled diagram of microscope

### **Sub unit 2: Brief knowledge on Micro-organisms**

1. Handling of Compound Microscope

### **Sub unit 3: Morphology and Structure of Bacteria**

1. Study of Morphological form and Structure of Bacteria
2. Study of Spore and Capsule of Bacteria

## **Unit 3: Sterilization**

### **Sub unit 1: Different methods of Sterilization**

1. Identify and demonstrate working of boiler, Hot air oven

### **Sub unit 2: Basic knowledge on**

1. Handling of autoclave
2. Preparation of Alcohol, gluteraldehyde and chlorine solutions

### **Sub unit 3: Process of Scrubbing Hands in Operatory**

1. Demonstrate Scrubbing of Hands for operatory

### **Sub unit 4: Process of Wearing**

1. Demonstrate wearing of face mask, Gloves and Gowns

## 2.5 Health Education

**Year: II**

**Theory Total: 37 hrs (1 hrs/week)**

**Practical Total:74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### **Course Description:**

The course teaches the educational aspects of public health management, which is an indispensable component for preventive health. The course teaches the concepts and theories of health behaviors and the procedure for planning, implementation and overall management of health education program. The aim of this course is to develop the necessary skills for effective application of health education at the community level.

### **Objectives:**

Upon completion of the course the learner will be able to:

1. Appreciate the significance of health education in preventive, promotive, curative and rehabilitative health care.
2. Identify and apply the theories and principles of health behavioral sciences in the process of health education.
3. Identify, select and utilize suitable health education methods and media for successful implementation of health service programs.
4. Plan, implement and evaluate health education programs.

### **Recommended Textbooks:**

1. Pradhan, H.B., A textbook of Health Education. Educational Resources for Health,1995.
2. Park, J.E. and Park, K., Textbook of Social and Preventive Medicine (15th ed.) 1997.

### **Unit: 1. Introduction to Health Education**

**[5]**

#### **Sub-unit : 1 Overview of health education**

1. Discuss the aims of health education.
2. Identify factors, which influence health, and will therefore influence health education.
3. Give examples of the way each factor can affect health.
4. Discuss the significance of health education in preventive, primitive curative and rehabilitative health care.
5. Give an example of how health education can help prevent disease.
6. Give an example of how health education helps in curing a disease.
7. Give an example of how health education can prevent disease.

#### **Sub-unit 2: Principles and scope of health education**

1. Describe the scope of health education.
2. Explain the principles of health education; give an example for each one.

### **Unit: 2 Fundamental Factors of Health Education**

**[10]**

#### **Sub-unit 1: Motivation**

1. Identify the theories and principles of motivation.
2. Apply the theories and principles of motivation in the process of health education.
3. Give an example of intrinsic and extrinsic motivation.

4. Explain how you might encourage a person to quit smoking by applying the principles of motivation.
5. Tell how to apply a theory of motivation to a health education class on dental care.

### **Sub-unit 2: Learning**

1. Describe the steps of the learning process.
2. Discuss factors, which increase or decrease learning.
3. Explain the theories and principles of learning.
4. Give an example to illustrate the principle “relevancy improves learning” when teaching the mother of a newborn.
5. Apply other principles of learning to health education situations.

### **Sub-unit 3: Learning**

1. Describe the different ways of learning.
2. Identify your own ways of learning.
3. Describe the best way to teach “tooth brushing” to someone who learns by hearing; by seeing; by doing.

### **Sub-unit 4: Change process**

1. Explain the theories of change process.
2. Describe how change process is part of health education.
3. Identify one health behavior, which is best changed by force.
4. Identify one health behavior, which illustrates a change made by identification.
5. Describe an example of a health behavior change by internalization.
6. Explain why people resist changes.
7. Give examples of overcoming resistance to health behavior change.

## **Unit: 3 Methods of Health Education**

[5]

### **Sub-unit 1: Methods overview**

1. Describe the advantages and disadvantages of the different types of health education methods.
2. Select the suitable health education method for successful implementation of selected health education programmes.
3. Describe ways to make each method more successful.

### **Sub-unit 2: Mass group methods**

1. Describe the methods for providing education to large groups of people.
2. Identify the advantages and disadvantages of each method.
3. State the criteria for selecting an appropriate method.
4. Give an example of an appropriate way to use each method in a health education effort.

## **Unit: 4. Media of Health Education**

[2]

### **Sub-unit 1: Overview of media**

1. Describe the advantages and disadvantages of the different types of health education media.
2. Identify criteria used for selecting appropriate media for a method of providing education.
3. Select the appropriate media for health education programmes.
4. Describe how to prepare and use audio and visual aids.

## **Unit: 5. Planning of Health Education Programmes**

[5]

### **Sub-unit 1: Principles of planning**

1. Describe the need for planned health education programmes.

2. Give examples of useful data collection for selecting a needed educational programme.
3. State an example showing how to set priorities of health education needs.
4. Differentiate between general and specific objectives.
5. Describe ways to decide what and how much to teach in an educational programme.

**Sub-unit 2: Application of planning**

1. Describe what is meant by “target group” and give an example.
2. Explain the importance/ application of making plans with sufficient detail.
3. Identify criteria and methods for evaluating a programme.
4. Use all the components of planning to plan a health education programme.

**Unit: 6. Implementation of Health Education Programmes**

**[10]**

**Sub-unit 1: Application of the process**

1. Describe the benefits of evaluating a health education program.
2. Explain how the program manager uses each of the stages of evaluation.
3. Give examples of process evaluation and impact evaluation.

**Sub-unit 2: Evaluation of health education program**

1. Give examples of ways to measure adequacy, relevancy, and efficacy of an educational program.
2. Describe how a program could be found “inappropriate” by an evaluator.
3. Discuss advantages and disadvantages of each method of evaluation.
4. Apply the process of evaluation to a simulated or real educational program.

**Sub-unit 3: Training**

1. Describe the benefits of training in Health education program
2. List and Explain different types of training and give examples

**Sub-unit 4: Supervision**

1. Describe the benefits of supervision in Health education program
2. List and Explain different types of supervision with examples

## 2.6 Epidemiology and Community Diagnosis

**Year: II**

**Theory Total: 74 hrs (2 hrs/week)**

**Practical Total: 74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### Course Description:

This foundational course of community health practice is designed to develop the competencies and attitudes for application of epidemiological principles in community health diagnosis and health care practices.

### Course Objectives

On completion of the course the student will be able to:

1. Describe disease causation and modes of transmission, identifying the agent, host, and environmental factors, as the basis for environmental health of the community.
2. Use epidemiology to identify health problems of the community.
3. Investigate and manage an epidemic outbreak in the community.
4. Conduct a community diagnosis.
5. Describe the various health practices among the diverse ethnic groups of Nepal.

### Minimum Standards:

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### Reference Texts:

1. Park, K. Park's Textbook of Preventive and Social Medicine. M/S Banarasidas Bhanot, Jabalpur, India. Current edition.
2. Parker, D.J.P., Practical Epidemiology. ELBS Publications. Current edition.
3. Essential Preventive Medicine, by O.P. Ghai, Piyush Gupta. Vikas Publishing House, India. Current edition.
4. Basic Epidemiology. WHO publication.

### Unit: 1. Basic Epidemiology

[30]

#### Sub-unit 1: Concepts of Disease

1. Define the term disease (simple concept of disease) and give examples.
2. Describe the spectrum of disease, using examples.
3. Explain what is meant by the "iceberg phenomenon" of disease.
4. Concepts of disease causation:
  - a. Explain the "epidemiological triad" concept of disease causation
  - b. Define the terms: agent, host and environment.
  - c. List examples of common agent, host & environmental, factors.
  - d. Explain with an example the concept of "web of causations."
  - e. Define risk factors & risk groups.
  - f. Illustrate risk factors & risk groups in relation with particular diseases.
5. Explain in brief the natural history of disease.
6. State in brief concept of disease control, elimination, eradications & surveillance.

7. List the names of diseases/health problems that are under the control, elimination, eradication and surveillance of HMG's current health program.

### **Sub-unit 2: Concepts and method of epidemiology**

1. Explain the concept of epidemiology.
2. List the scope of epidemiology
3. State purpose/aim of epidemiology.
4. Describe the tools (rate, ratio, proportion) and common measurements (eg. mortality, morbidity, disability, determinants of health i.e. health related factors) used in an epidemiological study.
5. Types of epidemiology:-
6. Screening for disease:
  - a. Define the concept of screening.
  - b. List the pre-requisites of a screening test.
  - c. List the names of common diseases, target populations and tests used for screening.

### **Sub-unit 3: Infections disease epidemiology**

1. Define the terms: infection and infectious disease, epidemic, endemic, sporadic, pandemic, exotic, opportunistic infection, source of infection, reservoir of infection, iatrogenic infection.
2. Dynamics of disease transmission.
  - a. Outline the transmission cycle of disease (chain of infection)
  - b. Describe the term "reservoir" in terms of human reservoir in non-living things.
  - c. Differentiate between direct and indirect modes of transmission; give examples of diseases for each.
  - d. Explain the terms "incubation period" and "period of communicability" in relation to a susceptible host.
  - e. Identify the incubation period and communicable period of common diseases.
3. Infectious disease prevention and control:
  - a. Describe methods for controlling the reservoir, interruption of transmission and protecting the susceptible host.
  - b. Discuss each method of control with relationship to a specific disease.

## **Unit 2: Community Diagnosis**

**[30]**

### **Sub-unit 1: Introduction to Community Diagnosis**

1. Define community diagnosis.
2. Describe the benefits of using the community diagnosis process.
3. Explain the objectives of performing a community diagnosis.
4. Identify the steps of the community diagnosis process.
5. Describe the components of a community diagnosis, using a realistic example.
6. Differentiate between community diagnosis and clinical diagnosis.

### **Sub-unit 2: Data collection**

1. Differentiate between primary and secondary data and their sources.
2. Give examples of primary and secondary sources.
3. Differentiate between quantitative and qualitative data, using examples.
4. Identify the purposes of census and sample surveys.
5. List sampling methods and explain the significance of sample size.
6. Describe methods of sampling.
7. Prepare, pre-test and rewrite a survey instrument.

**Sub-unit 3: Data processing**

1. Explain each step of data processing.
2. Apply data processing to a community diagnosis project in your field practice.

**Sub-unit 4: Community presentation**

1. Explain the aims and goals of the community presentation of a community diagnosis.
2. Conduct a community presentation.
3. Identify the steps of a community presentation.

**Sub-unit 5: Report writing**

1. Explain the aims and benefits of project reports.
2. Describe the components of a project report.

**Unit 3: Biostatistics and Dental Science****[14]****Sub-unit 1: Introduce to Biostatistics and Dental Science**

1. Introduce to Biostatistics and dental science
2. Define Statistics and its uses in dental science
3. Discuss data, its classification and sources
4. Discuss means of data collection and methods of obtaining primary data
5. Discuss sampling and two basic ways of sample selection
6. Describe sample size and errors in sampling
7. List and explain data presentation methods
8. Discuss in detail the measures of central tendency
9. Discuss in detail the measures of dispersion
10. Briefly discuss the taste of significance

## 2.7 Environmental Health

**Year: II**

**Theory Total: 74 hrs (2 hrs/week)**

**Practical Total: 74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### Course Description:

This course introduces the student to the specialized skill and knowledge needed to provide environmental health services. The content is taught using classroom instruction and practical experiences in community based programmes and primary health care services during field practice at the Health Post and home visits. This course includes information about the relationship between environment and health, water resource management and conservation, waste management, food Science, healthful and sanitary housing, air quality management, control of rodents, arthropods and insects, and occupational health.

### Course Objectives:

At the end of the course, the learner will be able to:

1. Describe the relationship between the environment and health, and show the impact of environment on health.
2. Describe water resources conservation and water quality management.
3. Explain proper waste management in urban and in rural areas.
4. Describe how to maintain food Science.
5. Describe standards of safe housing and effects of poor housing.
6. Explain air pollution and its management.
7. Describe methods of controlling rodents, arthropods and insect.
8. Identify occupational diseases and strategies for their prevention.

### Minimum Standards:

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### Recommended Textbooks:

#### Unit: 1. Environmental Health Concepts

[20]

##### Sub-unit 1: Define Terminology

1. Define:
  - a. Environment
  - b. Environmental Health
  - c. Environmental Sanitation
  - d. Environmental Pollution
2. Evaluate and describe the environmental health of your home community.
3. Give examples of environmental sanitation efforts in Nepal.
4. Describe examples of local, national, and global pollution.
5. Tell one thing you do to improve the environmental health of your community.

### **Sub-unit 2: Relation of Environmental Health**

- १। Describe the relationship between environment and health.
- २। Define the terms: agent, host, and environment.
- ३। Give examples of agent, host and environment.
- ४। Give examples of diseases which have become more common because of changes in the land use, population migration, or environment in Nepal.

### **Sub-unit 3: Environmental hazards and effects**

- १। Define environmental hazards and give examples.
- २। Differentiate between biological and chemical hazards.
- ३। Describe the long term and short term effects of selected biological and chemical hazards.
- ४। Analyze different types of environmental hazards and suggest ways to reduce the harmful effects of environmental hazards.

### **Sub-unit 4: Basic environmental threats**

- १। Discuss basic environmental threats in Nepal
- २। Identify different types of environmental threats.
- ३। Give examples of the three types of environmental threat.
- ४। Describe how you would implement measures to reduce one of these threats, as a health post manager.

## **Unit: 2. Water**

[20]

### **Sub-unit 1: Introduction of Water**

- १। State the value requirement, nature and cycle of water
- २। Define safe and wholesome water
- ३। Identify the uses of water

### **Sub-unit 2: Source of water**

- १। Identify various sources of water
- २। Identify merits & demerits of different sources.
- ३। Discuss the reasons why some areas of Nepal experience water shortages more often now, than 40 years ago.
- ४। Explain the relationship between deforestation and water shortages in Nepal.
- ५। Relate water shortages with quality of life and health.
- ६। Discuss ways to prevent water shortages.

### **Sub-unit 3: Water pollution**

- १। Define water pollution
- २। Describe causes of water pollution
- ३। Explain the prevention of water pollution
- ४। Identify important water borne diseases.

### **Sub-unit 4: Purification of water**

- १। Describe different ways to achieve water purification.
- २। Describe different methods of water purification at the household level.
- ३। Describe how to disinfect well water.
- ४। Describe the methods of water purification on a large scale.
- ५। Describe the features of a sanitary well

### **Sub-unit 5: Water quality**

1. State the criteria and standards for water quality according to WHO and the Ministry of Health.
  - a. List the standards for good physical quality

- b. List the standards for good chemical quality
- c. List the standards for good biological quality
2. Give examples to illustrate low quality in each classification.

## **Unit: 3. Waste**

[10]

### **Sub-unit 1: Introduction of waste**

1. Define waste
2. Give examples of solid waste and identify their sources.
3. Give examples of liquid wastes and identify their sources.
4. Give examples of hazardous wastes and identify their sources.

### **Sub-unit 2: Solid waste**

1. Identify examples of biodegradable and non-biodegradable solid wastes in Nepal.
2. Describe national efforts in Nepal and other countries to reduce the amount of non-biodegradable wastes.
3. Describe national and local efforts to introduce recycling of solid wastes.
4. Discuss ways the health post manager could educate the community and mobilize efforts to reduce solid waste problems.

### **Sub-unit 3: Solid waste Management**

1. Explain the 3R concept of minimizing waste
2. Describe the disposal of waste in urban areas in Nepal and other countries.
3. Discuss the purposes and effectiveness of Nepal's anti-litter campaign.
4. Describe the disposal of waste in rural areas.
5. Identify the advantages and disadvantages of each method of solid waste disposal.

### **Sub-unit 4: Hazards of solid waste**

1. Denitrify both health hazards and environmental hazards created by solid waste mismanagement.
2. Give examples when solid waste mismanagement resulted in health problems in other countries.
3. Identify an example of solid waste mismanagement in your own community.

### **Sub-unit 5: Hospital waste management**

1. Identify different kinds of hospital waste.
2. Describe the communicable disease risks from improper disposal of excreta, vomit, urine, contaminated dressings, blood, used needles and other sharp instruments, broken glass.
3. Describe the correct management of hospital wastes.
4. Describe the characteristics of a safe needle disposal system.
5. Describe the management system of liquid and solid wastes at your clinical setting.

## **Unit: 4. Food Science**

[10]

### **Sub-unit 1: Concept of food Science**

1. Define food Science.
2. Explain importance/ application of food Science.
3. Identity different food Science methods.
4. Discuss rules for food handling, which ensure sanitary, hygienic conditions of eating-places.
5. Tell which branch of government has responsibility and authority for evaluating sanitation of public eating places and food preparation industries.

**Sub-unit 2: Food borne disease**

1. Discuss the incidence of food poisoning.
2. Identify common food borne diseases.
3. Identify foods, which carry a high risk of containing toxins.
4. Give examples of bacterial, plant, and chemical poisons, which are ingested with food.
5. Differentiate between food borne infections and bacterial food poisoning.

**Sub-unit 3: Sources of food contamination.**

1. Define food contamination.
2. Identify and describe sources of food contamination.
3. Give an example showing how a cook in a restaurant who has enteric infection can spread the bacteria to the customers.

**Sub-unit 4: Food Preservation.**

1. Define food preservation
2. Identify purpose of food preservation.
3. Describe different methods of food preservation.

**Sub-unit 5: Food additives, food fortification and food adulteration.**

1. Define food fortification.
2. Explain importance/ application of food fortification.
3. Explain different food fortification practices in Nepal.
4. Define food additives and describe different types of food additives.
5. State the hazards of using food additives.
6. Define food adulteration and discuss its hazards.
7. Describe different food adulteration practices.

**Unit: 5. Air****[5]****Sub-unit 1: Introduction of air pollution.**

1. Describe air and its composition.
2. Define air pollution.
3. Describe effects of air pollution on health and society.
4. Describe sources air pollution.
5. Describe indicators of air pollution.

**Sub-unit 2: Prevention and control of pollution.**

1. Describe measures for the prevention and control of air pollution.
2. Identify methods for disinfection of air.

**Sub-unit 3: Major issue in air pollution.**

1. Describe the theory of the green house effect, its causation and effects.
2. Describe the current situation of ozone depletion, its causation and effects (impacts).
3. Explain what is meant by “acid rain.”
4. Describe the causes and impact of acid rain.

**Unit: 6. Entomology****[5]****Sub-unit 1: Introduction of Entomology.**

1. Define entomology and medical entomology
2. Identify medically important arthropods and insects.
3. Identify arthropod and insect borne diseases.
4. Describe the transmission of each of the common arthropod/insect borne diseases.

**Sub-unit 2: Arthropod borne diseases and its control**

1. Describe principles of arthropod control.
2. Describe the measures to control arthropod and insect diseases.
3. Identify diseases caused by: mosquito, housefly, bed bug; redevid bug, hard tics, soft ticks, trombiculid mites, itch, mites, cycleps, cockroaches, louse, fleas.
4. Identify the actions of different types of insecticides and repellents.

**Unit: 7. Occupational Health**

**[4]**

**Sub-unit 1: Occupational diseases**

1. Describe common occupational diseases in Nepal.
2. Describe the clinical features and causes of these occupational diseases.
3. Describe three forms of prevention of occupational diseases and give an example of each.

## 2.8 Basic Medical Procedures / First Aid

**Year: II**

**Theory Total: 111 hrs (3 hrs/week)**

**Practical Total: 74 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### **Course Description:**

This course provides the principles and techniques for performing the skills of medical care at the Health Assistant level, and includes a basic first aid course. The skills include basic history taking and physical examination, procedures for administering medications, wound care, performing invasive procedures, and simple suturing. The first aid course includes procedures for bandaging, cardiopulmonary resuscitation, and choking, in addition to basic first aid measures.

### **Course Objectives:**

By completion of this course the learner will be able to:

1. Respond appropriately to first aid situations at the health post or elsewhere in the community.
2. Identify first aid situations which require referral to a higher level facility.
3. Perform a basic history taking and physical examination of the patient efficiently and thoroughly.
4. Perform selected basic invasive procedures and wound care according to guidelines.
5. Administer medications by each route safely and efficiently.
6. Maintain medical or surgical asepsis during procedures as needed.
7. Maintain hygienic conditions within the health post.
8. Identify topics for community education to promote safety and reduce preventable injuries.

### **Minimum Standards:**

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### **Recommended texts:**

First Aid: the Authorised Manual of St. John's Ambulance Association (current edition)  
Manual for Primary Health Care, Health Learning Materials Center, 1999/2055  
Fundamentals of Nursing, Health Learning Materials Center

### **Unit 1: Basic Medical Procedures**

#### **Sub-unit: 1 Professional Role**

[5]

1. Discuss the ways the H.A. demonstrates qualities of: integrity, responsibility, commitment, respectfulness, healthful living, and desire for ongoing learning.
2. Discuss the consequences of unprofessional behavior.
3. Describe the hierarchy of authority within the Nepalese health care system.
4. Describe the role of the Nepal Professional Council.
5. Identify the appropriate steps to follow when confronted with unethical or illegal behavior of another health care worker.
6. Explain why Health Assistants have a responsibility to maintain current with continuing

education.

**Sub-unit: 2 Communicating Professionally** [5]

1. Discuss the process of “sending-receiving” verbal, nonverbal, and written communication
2. Describe factors, which aid or interfere with clear communication.
3. Discuss how cultural values affect clear communication of ideas.
4. Explain the importance/ application of establishing a trusting relationship between Dental Hygienist and patient.
5. Describe ways to respectfully direct, inform, or make requests to others, in your role as Dental Hygienist
6. Demonstrate through role play:
  - a. Introducing self to co-workers, patients
  - b. Establishing trust with a patient
  - c. Requesting sensitive information from a patient
  - d. Giving bad news to a patient/family
  - e. Directing or correcting a subordinate
  - f. Making a request to your supervisor

**Sub-unit: 3 Assessment of vital signs** [5]

1. State the indications and purposes for V.S. measurement.
2. Identify factors which interfere with accurate measurements.
3. Tell implications of abnormal findings.
4. Explain the significance of accuracy in V.S. measurement.
5. Demonstrate proper techniques according to guidelines:
  - a. Palpating pulses at six chief sites
  - b. Counting respirations
  - c. Taking temperature at 3 chief sites
  - d. Measuring blood pressure
  - e. Recording V.S.
  - f. Caring for V.S. equipment

**Sub-unit: 4 History taking & Physical Examination** [5]

1. Explain the purpose of the history & physical.
2. Describe strategies for organizing a history & physical.
3. List the components of a complete history & physical.
4. Give examples when modifications must be made to the usual history and physical.
5. Describe ways to gain the trust of the patient and patient party.
6. Describe ways to provide privacy and promote comfort and cooperation of the patient.
7. Perform a history taking and physical exam in a simulated setting, according to guidelines.
8. Describe how symptom patterns and symptom correlations direct the process of differential diagnosis.
9. Examine the diagnostic diagram for “abdominal pain” in the Manual for Primary Health.

**Sub-unit: 5 Administration of oral and topical medicines** [5]

1. Tell the advantages and disadvantages of the various routes for medication administration.
2. Explain how medicines are absorbed by the body from the GI tract, skin, or membranous tissue.
3. Tell what functions are served by topical medications.
4. Give examples of medicines, which can be absorbed through the skin.
5. Tell what things may interfere with the absorption of oral or topical meds.

6. Discuss ways to modify giving oral medicine when the patient is unable to cooperate with swallowing pills.
7. Describe the “5 rights” in the administration of all meds.
8. Describe the procedure for administering meds into the eye, ear, nose, rectum, vagina or onto the skin.
9. Discuss procedures for recording medication administration.
10. Demonstrate administration of meds by all of the above routes according to guidelines.

**Sub-unit: 6 Administration of IM & IV medicines** **[5]**

1. List the advantages and disadvantages of medicine administration by the intramuscular (IM) and intravenous (IV) routes.
2. Identify the types of medicine which are administered by subcutaneous (SC or SQ) or intradermal (ID) routes.
3. Identify appropriate sites for IM administration in adults, children and infants.
4. Explain why there are increased risks when medicine is injected directly into the vein.
5. State the precautions which must be followed to protect the patient from harmful IV medicine administration.
6. Describe the procedures for administering IM and IV medicines, or beginning IV fluids, according to guidelines.
7. Describe the technique and reason for using the “Z track” method of IM administration.
8. Describe principles and procedures for safe needle disposal.
9. Demonstrate one-handed needle recapping, to use when a safe needle disposal container is not readily available.
10. Demonstrate administration of medicines by the above routes according to guidelines.

**Sub-unit: 7 Medical-surgical asepsis** **[5]**

1. Differentiate between surgical asepsis (free from all organisms) and medical asepsis (free from pathogens)
2. Explain the principles and rationale for medical asepsis and surgical asepsis.
3. Discuss the ways to maintain sanitation in the health post setting.
4. Demonstrate proper hand-washing technique, according to guidelines.
5. State the principles and rationale for using careful hand-washing.
6. Discuss when to use different kinds of hand-washing procedures.
7. Demonstrate aseptic technique when using instruments for an aseptic procedure.
8. Demonstrate handling sterile instruments during a sterile procedure.

**Sub-unit: 8 Invasive Procedures** **[5]**

1. State the risks to a patient with each of these invasive procedures: urinary catheterization, Intravenous insertion, nasogastric insertion.
2. Explain what is meant by implied consent.
3. Discuss ways to make the invasive procedures less uncomfortable for the patient.
4. Tell the signs of complications for each of these invasive procedures.
5. Demonstrate these procedures according to the guidelines.

**Sub-unit: 9 Principles of First Aid** **[5]**

1. Discuss the aims of first aid and the responsibility of the first aider.
2. Describe the initial actions of the first aider.
3. List the essential principles of first aid.
4. Describe the steps of assessment, management and disposal of the casualty case.

**Sub-unit: 10 Dehydration, heat reaction, altitude sickness, hypothermia, frostbite[5]**

1. State examples of when persons might be at risk for dehydration, heat reaction, altitude sickness, hypothermia, frostbite.
2. Describe the signs and symptoms of dehydration, heat reaction, altitude sickness, hypothermia, frostbite.
3. Describe the recommended immediate treatment for each of these.
4. Describe indications that immediate referral to a higher level facility is necessary.
5. Explain how community education can prevent occurrences of dehydration, heat reaction, altitude sickness, hypothermia, frostbite or ensure a safe recovery.

**Sub-unit: 11 Animal bites, stings and poisoning [5]**

1. Discuss the incidence of injury due to animal bites, stings and poisoning.
2. Explain the importance/ application of capturing and/or identifying the snake, animal or poison which harmed the casualty.
3. Discuss indications that a casualty is or may have a severe allergic reaction to an insect sting.
4. Describe the appropriate management for cases of animal bites, stings or poisoning.
5. Discuss why a tourniquet is no longer used for snakebite, and describe the recommended management.
6. Tell when vomiting is NOT an appropriate way to manage poisoning.
7. Discuss why small children are at a high risk for poisoning, and how to prevent this.
8. Describe the recommended use of emergency medications for bites, stings and poisons.
9. Describe indications that the casualty should be removed to a higher level medical facility immediately.
10. Discuss ways to reduce the incidence of bites, stings and poisonings through community education.

**Sub-unit: 12 Fractures, splints, immobilization [5]**

1. Describe the clinical features of a closed fracture.
2. Differentiate between the symptoms of a dislocation and a fracture.
3. State the management of an open fracture.
4. Describe ways to immobilize selected fractures
5. Discuss situations which indicate that immobilization of the neck and spine is required.
6. Describe measures to immobilize the neck and spine.
7. Demonstrate lifting and transporting a patient who must remain immobile.
8. Explain why all fractures should be referred to a higher level facility for management.
9. Describe prevention measures which should be included in community education, such as the use of a safety harness when working at great heights.

**Sub-unit: 13 Wounds, burns and bandaging [5]**

1. Describe closed and open wounds, lacerations, contusions, and abrasions.
2. Describe how to manage a laceration, puncture wound, or gunshot wound.
3. Demonstrate selected types of bandaging.
4. Describe procedures for controlling hemorrhage: pressure dressings, pressure point constriction.
5. Tell indications for selecting to approximate a wound with “butterfly” taping, versus suturing.
6. Differentiate between different kinds of burns: chemical, friction, thermal, electrical.
7. Identify the characteristics of 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> degree burns.
8. Describe the management of each degree burn.

9. Describe indications that a person with a wound should be transported to a higher level facility.

**Sub-unit: 14 Hemorrhage** [5]

1. Describe the appropriate interventions for severe hemorrhage from: an extremity, abdominal wound, scalp wound, neck laceration.
2. Explain why a tourniquet is harmful for most circumstances of hemorrhage.
3. Describe the signs/symptoms of internal hemorrhage: abdominal, subdural, intracranial, thoracic.
4. State the interventions for stabilization of the person with severe blood loss.
5. Describe the precautions to use when transporting a patient who has had severe blood loss.

**Sub-unit: 15 Management of severe breathlessness** [5]

1. Identify the common causes for breathlessness (shortness of breath).
2. Identify the distinguishing features characteristic of each cause of breathlessness.
3. Describe measures available at the health post to relieve breathlessness.
4. Identify the questions to ask to analyze the causes of breathlessness in the person.
5. Identify indications for referral to a higher level facility.

**Sub-unit: 16 Heart attack** [5]

1. Describe the pathophysiology of myocardial infarction (M.I.)
2. Differentiate between angina and M.I.
3. Describe the common symptoms of M.I.
4. Identify immediate treatment for M.I. available at the health post.
5. Identify indications for immediate referral to a higher level facility.

**Sub-unit: 17 Epileptic seizure** [5]

1. Identify the causes and clinical features of epileptic seizure (fits).
2. Differentiate between epileptic seizure and hysterical fits.
3. Describe the appropriate management of a seizure (fit) for adults and children.
4. Tell when an emergency medication should be administered to the person experiencing unrelenting seizure (fit), and discuss the type, dosage and route of administration.
5. Demonstrate correct positioning to maintain the airway of an unconscious person.
6. Describe indications for immediate transport of the casualty for higher level care.
7. Discuss measures to educate the community about prevention and treatment for seizures.

**Sub-unit: 18 Concussions and Stroke (CVA)** [5]

1. Describe the clinical features of a skull fracture.
2. Define concussion.
3. Describe the signs and symptoms of mild, moderate and severe concussion.
4. Identify the appropriate initial management of mild, moderate and severe concussion.
5. Describe the pathology of a stroke, or cerebral vascular accident (CVA).
6. Describe the signs and symptoms of mild, moderate or severe stroke.
7. Identify the immediate actions to take for the person who has had a mild, moderate, or severe stroke.
8. Identify indications that the person who has had a concussion or stroke should be transported to a higher level facility immediately.

**Sub-unit: 19 Assessment of unconscious person** [5]

1. Define the terms related to assessment of level of consciousness.
2. Describe how to assess the ABC's of vital functions:
  - a. airway clear

- b. breathing adequate
- c. circulation and cardiac function good
- 3. Identify the signs of common causes of unconsciousness.
- 4. Demonstrate placement of the unconscious person in recovery position or in shock position.
- 5. Explain why the Health Assistant should begin IV infusion for the unconscious patient.
- 6. Identify important information to ask of the persons accompanying the casualty.
- 7. Describe how to examine the body for evidence of injury or bites.
- 8. Identify emergency medications to use in the management of each of the causes of unconsciousness listed above.
- 9. Identify indications for immediate transfer to a higher level facility.
- 10. Discuss measures to ensure safe transport.

**Sub-unit: 20 Choking and obstructed breathing** [5]

- 1. Describe the symptoms of partial or complete airway obstruction due to choking.
- 2. Identify other common causes for airway obstruction.
- 3. Demonstrate how to position an unconscious person to maintain an airway.
- 4. Demonstrate how to assist the conscious and unconscious person with partial or complete airway obstruction by foreign body.
- 5. Identify indications for immediate referral to a higher level facility.
- 6. Describe the features of a community education program designed to prevent choking and teach the Heimlich maneuver.

**Sub-unit: 21 CPR for drowning, cardiac arrest** [5]

- 1. Identify the conditions which require CPR.
- 2. Give examples of causes of asphyxiation or cardiac arrest.
- 3. Differentiate between “dry drowning” and “wet drowning”.
- 4. State how many minutes a child or adult may survive without oxygenation to the brain.
- 5. Describe the symptoms of choking which indicate application of the Heimlich maneuver.
- 6. Describe the steps in assessment and intervention for the adult without respiration, pulse, or both
- 7. Tell the difference between CPR procedure for adult, child, infant, pregnant woman.
- 8. Describe ways to safely remove the source of electricity from a victim of electrocution before administering CPR.
- 9. Describe how to remove stomach contents from the victim of drowning, in order to increase ventilation by CPR.

**Sub-unit: 22 Multiple casualty/ multiple injury triage** [5]

- 1. Define the concept of triage and explain the purpose of triage.
- 2. Describe how to quickly assess airway, breathing, circulation and alertness.
- 3. List the other factors to assess, in order of importance/ application.
- 4. State the rationale for decisions about which measures should be taken first.
- 5. Discuss the factors which may influence the decisions about which patients will receive priority for care.
- 6. Discuss the feelings a health worker may experience when he/she must apply the principles of triage to a multiple victim situation.

# **Third Year**

## 3.1 BASIC PERIODONTOLOGY II

**Year: III**

**Theory Total: 78 hrs (4 hrs/week)**

**Practical Total: 117 hrs (6 hrs/week)**

**Full Marks: (Th. 100 + Pr. 100)**

**Pass Marks: (Th. 40 + Pr. 60)**

### Course Description

The course introduces the students to basic knowledge and skill necessary to perform dental scaling using manual instruments as well as ultra-sonic instruments on patients for common gingival and periodontal problems and refer the patients who require further treatment

### Objective

*After Completion of course the student will be able to:*

1. Diagnose and classify common periodontal disease
2. Acquire knowledge and skill to perform dental scaling using manual instruments as well as ultra-sonic instruments on patients
3. Conserve the tooth to the maximum possible extent by maintaining periodontal health
4. Develop an attitude to perform the treatment with full aseptic precautions
5. Refer the patients to Dental Surgeon or Periodontist who require further treatment.

### Minimum Standards:

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### Recommended Textbooks:

#### Unit 1: Periodontal Pathology

[20]

##### Sub unit 1: Gingival inflammation

1. Describe gingival inflammation
2. Describe various stages of gingival inflammation
3. Describe gingivitis
4. Describe course, duration and distribution of gingivitis
5. Describe clinical features of gingivitis

##### Sub unit 2: Gingival enlargement

1. Describe and classify gingival enlargement
2. Describe location and distribution of gingival enlargement
3. Describe types of gingival enlargement
4. Describe gingival enlargements associated with systemic diseases
5. Describe neoplastic gingival enlargement
6. Discuss false enlargement

##### Sub unit 3: Gingival lesions

1. Describe acute necrotizing ulcerative gingivitis
2. Describe acute herpetic gingivostomatitis
3. Describe pericoronitis
4. Describe chronic desquamative gingivitis

**Sub unit 4: Periodontitis**

1. Describe & classify periodontitis
2. Describe progression of periodontitis
3. Describe slowly progressive periodontitis
4. Describe rapidly progressive periodontitis
5. Describe necrotizing ulcerative periodontitis
6. Describe prepubertal and juvenile periodontitis
7. Describe adult periodontitis
8. Describe refractory periodontitis

**Sub unit 5: Periodontal pocket**

1. Define periodontal pocket
2. Classify periodontal pockets
3. Describe clinical features
4. Describe pathogenesis and histopathology
5. Discuss microtopography of gingival wall of the pocket
6. Describe pocket contents
7. Discuss periodontal disease activity
8. Describe loss of attachment and bone loss
9. Differentiate between infrabony and suprabony pockets
10. Discuss sequelae of periodontal pocket

**Sub unit 6: Periodontal abscess and cyst**

1. Explain periodontal abscess
2. Explain periodontal cyst

**Sub unit 7: Bone loss and pattern of bone destruction**

1. Explain bone destruction caused by extension of gingival inflammation
2. Explain bone destruction caused by TFO
3. Explain bone destruction caused by systemic diseases
4. Explain bone destruction patterns in periodontal disease
5. Describe gingival recession
6. Describe furcation involvement
7. Describe tooth mobility

**Unit 2: Periodontal response to external forces**

**[10]**

**Sub unit 1:**

1. Discuss physiologic adaptive capacity of the periodontium to occlusal forces
2. Define trauma from occlusion
3. Differentiate primary and secondary trauma from occlusion
4. Describe influence of TFO on progression of marginal periodontitis
5. Discuss pathogenesis of TFO
6. Discuss acute and chronic trauma
7. Describe pathological tooth migration

**Unit 3: Systemic Effects of Periodontal Diseases** [8]

**Sub unit 1:**

1. Discuss cardiovascular disease/ SABA caused due to periodontal disease
2. Discuss Correlation of low birth weight babies and maternal periodontal disease

**Unit 4: Treatment of Periodontal Disease** [30]

**Sub unit 1: Diagnosis**

1. Define diagnosis and describe routine procedures of diagnosis
2. Discuss case history taking
3. Perform clinical examination
4. Describe methods of probing
5. Describe types of probes
6. Discuss routine investigative methods
7. Describe advanced diagnostic aids and their role in brief

**Sub unit 2: Prognosis**

1. Define prognosis in periodontics
2. Describe types of prognosis
3. Describe purpose and factors to be taken into consideration in individual and overall prognosis

**Sub unit 3: Treatment**

1. Describe rationale of various phases in treatment planning of periodontal disease
2. Define scaling and root planing
3. Discuss aims and objective of scaling and root planing
4. Discuss indications and contraindications of scaling and root planing
5. Discuss complications of improper scaling
6. Perform tooth polishing
7. Perform topical fluoride application
8. Follow up
9. Referral

**Sub unit 4: Hypersensitivity of teeth**

1. Define hypersensitivity of teeth
2. Describe causes of hypersensitivity of teeth
3. Explain theories on hypersensitivity of teeth
4. Describe treatment and precautions for sensitive teeth
5. Explain post-scaling hypersensitivity and its remedy
6. Describe medicated dentifrices and their mechanisms of action
7. Describe ianthophoresis

**Sub unit 5: Pharmaco-therapy**

1. Discuss local drug delivery system in periodontal therapy
2. Discuss various topical pharmacological agents used in periodontal therapy
3. Describe periodontal dressings

**Sub unit 6: Patient management**

1. Discuss education, motivation, and oral Science instruction to the patient
2. Discuss pain and anxiety control
3. Discuss post-operative instructions
4. Discuss periodontal treatment of medically compromised patient
5. Discuss periodontal treatment for highly sensitive patient
6. Discuss dental Science care of denture patients
7. Discuss dental Science care of orthodontic patients

**Unit 5: Infection control**

**[10]**

**Sub unit 1:**

1. Describe personal aseptic measures take by the dental hygienist
2. Describe various sterilization and aseptic procedures in dental operatory
3. Describe possible cross infections during dental procedures

**Practice**

**[117]**

**Unit 1: Periodontal Pathology**

**Sub unit 1: Gingival inflammation**

1. Demonstrate gingival inflammation and its stage on patient
2. Demonstrate gingivitis and its clinical feature on patient

**Sub unit 2: Gingival enlargement**

1. Demonstrate gingival enlargement and its distribution on patient
2. Demonstrate gingival enlargements associated with systemic diseases
3. Demonstrate neoplastic gingival enlargement
4. Demonstrate false enlargement

**Sub unit 3: Gingival lesions**

1. Demonstrate acute necrotizing ulcerative gingivitis on patient
2. Demonstrate acute herpetic gingivostomatitis
3. Demonstrate pericoronitis
4. Demonstrate chronic desquamative gingivitis

**Sub unit 4: Periodontitis**

1. Demonstrate various type and progression of periodontitis on patient
2. Demonstrate necrotizing ulcerative periodontitis
3. Demonstrate prepubertal and juvenile periodontitis
4. Demonstrate adult periodontitis

**Sub unit 5: Periodontal pocket**

1. Demonstrate periodontal pocket and its clinical features on patient
2. Demonstrate loss of attachment and bone loss due to periodontal pocket
3. Differentiate between infrabony and suprabony pockets
4. Demonstrate sequelae of periodontal pocket

**Sub unit 6: Periodontal abscess and cyst**

1. identify periodontal abscess
2. Identify periodontal cyst

### **Sub unit 7: Bone loss and pattern of bone destruction**

1. Identify bone destruction caused by extension of gingival inflammation
2. Identify bone destruction caused by TFO
3. Identify bone destruction caused by systemic diseases
4. Demonstrate gingival recession and identify its cause
5. Demonstrate furcation involvement and identify its grade
6. Demonstrate tooth mobility and identify its grade

## **Unit 2: Periodontal response to external forces**

1. Identify trauma from occlusion
2. Differentiate primary and secondary trauma from occlusion
3. Identify influence of TFO on progression of marginal periodontitis
4. Identify pathological tooth migration

## **Unit 3: Treatment of Periodontal Disease**

### **Sub unit 1: Diagnosis**

1. Perform routine procedures of diagnosis
2. Perform case history taking
3. Perform clinical examination
4. Demonstrate methods of probing

### **Sub unit 2: Treatment**

1. Perform scaling and root planing
2. Perform tooth polishing
3. Perform topical fluoride application

### **Sub unit 3: Pharmaco-therapy**

1. Prescribe various topical pharmacological agents used in periodontal therapy
2. Prescribe medicated dentifrices and their mechanisms of action
3. Perform ianthophoresis

### **Sub unit 4: Patient management**

1. Perform education, motivation, and oral Science instruction to the patient
2. Perform pain and anxiety control to the patient
3. Explain post-operative instructions to the patient
4. Perform dental Science care of denture patients
5. Perform dental Science care of orthodontic patients

## **Unit 4: Infection control**

1. Demonstrate personal aseptic measures taken by the dental hygienist
2. Perform various sterilization and aseptic procedures in dental operatory

## 3.2 FOOD AND NUTRITION

**Year: III**

**Theory Total: 58 hrs (3 hrs/week)**

**Practical Total: 39 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### **Course Description:**

This course aims to orient the students about the basic knowledge on food and nutrition. It also provides knowledge about nutritional aspects of oral health with emphasis on oral manifestation of different nutritional deficiency and to prevent them and also be able to recommend proper dietary habits.

### **Course Objectives:**

At the end of the course, the learner will be able to:

1. Acquainted with the basic concepts of food and nutrition
2. Describe protein, vitamins, minerals with emphasis on deficiency and adverse reactions in relation to oral manifestations
3. Perform prevention of nutritional deficiency.

### **Minimum Standards:**

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### **Recommended Textbooks:**

### **Unit I: Orientation to Food and Basic Nutrition**

**[20]**

#### **Sub Unit 1: Basic Concepts about Food and Nutrition Carbohydrate**

1. List the source and function of carbohydrate.
2. Mention the recommended dietary allowance.
3. List different deficiency (emphasis on oral manifestation)
4. Mention adverse reaction (emphasis on oral manifestation)

#### **Sub Unit 2: Proteins**

1. List the source and function of proteins.
2. Mention the recommended dietary allowance.
3. List different deficiency (emphasis on oral manifestation)
4. Mention adverse reaction (emphasis on oral manifestation)

#### **Sub Unit 3: Vitamins (Water Soluble & Fat Soluble)**

1. List source & function of vitamins.

2. Mention the recommended dietary allowance
3. List different deficiency (emphasis on oral manifestation)
4. Mention adverse reaction (emphasis on oral manifestation)

**Sub Unit 4: Minerals & Water (Iron, Zn, Ca, Phosphorus)**

1. List source & function of minerals & water.
2. Mention the recommended dietary allowance
3. List different deficiency (emphasis on oral manifestation)
4. Mention adverse reaction (emphasis on oral manifestation)

**Sub Unit 5: Vitamins /Minerals/ Water (requirement for calcified structure/oral soft tissues/ salivary glands)**

**Unit 2 Nutritional Aspects of Oral Health**

**[20]**

**Sub Unit 1: Nutritional Aspects of dental caries .. Causes and prevention**

1. Explain the roles the tooth , saliva, food and plaque play as factors in the carries process
2. Identify foods that stimulate salivary flow
3. Suggest anti-cariogenic foods choices to modify a cariogenic diet
4. Describe the characteristics of some foods that are non cariogenic
5. Provide dietary counseling to a patient who is at risk of dental carries.

**Sub Unit 2: Nutritional Aspects of gingivitis and peodontal diseases**

1. Identify the role nutrition plays in periodontal health and diseases
2. Discuss the effects of food consistency and composition in periodontal diseases
3. Describe the etiologic factors associated with gingivitis and periodontitis
4. Identify the major structure of periodontium
5. Discuss the components of nutritional counseling for periodontal patient

**Sub Unit 3: Nutritional Aspects of alterations in the oral cavity**

1. Describe the common sign and symptoms of xerostomia and glossitis
2. List different factors contributing to xerostomia and glossitis

3. Determined the appropriate dietary recommendations for a patient with xerostomia and removable appliances
4. Know about dietary guidelines to be given to a new denture patient both pre and post insertion

**Sub Unit 4: Nutritional Assessment counseling for dental Science patient**

1. Discuss the importance/ application of thorough health social and dental History
2. Describe the components needed to assess the nutritional status of a patient
3. Formulate a dietary treatment plan for a dental problem influence by nutrition
4. Describe the steps in a nutritional counseling session
5. Discuss several communication skills that are helpful for the dental hygienist to employ when counseling a patient

**Unit 3: Considerations of clinical nutrition**

[8]

**Sub Unit 1: Nutritional requirement affecting oral health in females**

1. Discuss about nutritional deficiencies and their impact of tooth and oral development
2. List various nutrients that are usually supplemented during pregnancy and lactation

**Sub Unit 2: Effects of systemic diseases on nutritional status and oral health**

1. Discuss about the major oral problems (sign and Symptoms associated with systemic diseases of system basis
2. Recognize disease and conditions that are likely to affect nutritional intake
3. Discuss appropriate dental Science instructions for patient with systemic disease or conditions having oral manifestation
4. Identify nutritional recommendation for patient with disease or conditions with oral manifestation

## **Practical**

**[39]**

### **Unit 1: Diet counseling**

1. Prepare diet chart for diet counseling classes
2. Prepare food pyramids for diet counseling classes
3. Conduct diet counseling classes

### **Unit 2: Diet methods and chart**

1. Demonstrate diet methods
2. Prepare diet chart for patient

## 3.3 Basic Dental Pharmacology

**Year: III**

**Theory Total: 58 hrs (3 hrs/week)**

**Practical Total: 58 hrs (3 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### **Course Description:**

This course aims to orient the students on the drugs used in the process of oral prophylaxis. The students will be taught about the pharmacology of the drugs used during oral prophylaxis and its administration, in order that they are able to prescribe it depending on its need. The course also includes brief concepts about few groups drugs commonly used in dentistry.

### **Course Objectives:**

After Completion of course the student will be able to

1. Identify the various drugs used in oral prophylaxis and administering them
2. Identify and advise drugs for dental preventive purposes
3. Prescribe oral preventive drugs

### **Minimum Standards:**

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### **Recommended Textbooks:**

#### **Unit 1: Definition & Routes of Drug Administration**

**[18]**

##### **Sub Unit 1: Dental pharmacology & drugs administration**

1. Define pharmacology & drugs
2. List different routes of administration with their advantage and disadvantages.
3. Discuss in brief about pharmaco dynamics and Pharmaco Kinetics of Drugs.

##### **Sub Unit 2: Local Drug Delivery**

1. Define plague and antiplague
2. List different antiplague agent
3. List properties & uses of antiplague agents.

4. Describe in detail about Chlorhexidine gluconate as Antiplague agent including Chemistry, Mode of Action, Uses & side effect & Drug dosage.
5. List different analgesic and antimicrobial that can be used locally

**Unit 2 Dentrifrices, Mouth Wash, Obtudents, Anti Caries, Astrigents & Tropical Anesthetic Agents (In Brief) [20]**

**Sub Unit 1: Dentrifrices**

1. Define dentrifrices.
2. List properties and types of dentrifrices.
3. Describe functions of dentrifrices.
4. List the composition/ ingredients with their function.

**Sub Unit 2: Mouth Wash**

1. Define Mouth wash
2. List the use of mouth wash.

**Sub Unit 3: Obtudents**

1. Define obtudents.
2. List the uses of obtudents.

**Sub Unit 4: Anti Caries Agent**

1. Define anti caries agent
2. Classify the anti caries agent
3. Describe mode of action on the prevention of caries.
4. Give brief overview on fluoride as anticaries agent including source, fluoride vehicle, tropical & systemic fluoridation & fluoride toxicity.

**Sub Unit 5: Astrigents & Tropical Anesthetic Agents (In Brief)**

1. List different astrigents & tropical anesthetic agents.

**Unit 3 Drugs use in dentistry (Analgesics and Antimicrobials) [20]**

**Sub Unit 1: Non opioid (non Narcotic)/ and Opioid analgesic**

1. Classify analgesic drugs
2. List differences between Non opioid (non Narcotic)/ and Opioid analgesic
3. Discuss in short about the groups of drugs under Non opioid analgesic including mechanism of action, uses and adverse reaction.

4. Discuss in short about the groups of drugs under opioid analgesic including mechanism of action, uses and adverse reaction.

**Sub Unit 2: Antimicrobials / anti-infective agents**

1. Define of antimicrobials
2. Classify of antimicrobials
3. Identify the indication for antimicrobial agents
  - a. Therapeutics
  - b. Prophylactic
4. List general advert reactions associated with antibiotic agents
  - a. super infection
  - b. allergic reaction
  - c. Drug interactions
  - d. Gastro intestinal complains
  - e. Pregnancy
  - f. Dosage related toxicity
5. Identify Mechanism of action Uses and Adverse drug reactions

Penicillin group of antibiotic

- a. Mechanism of action
- b. Uses
- c. Adverse drug reactions

Macrolide group of antibiotic

- a. Mechanism of action
- b. Uses
- c. Adverse drug reactions

Tetracycline group of antibiotic

- a. Mechanism of action
- b. Uses
- c. Adverse drug reactions

Metronidazole group of antibiotic

- a. Mechanism of action
- b. Uses
- c. Adverse drug reactions

Cephalosporins group of antibiotic

- a. Mechanism of action
- b. Uses
- c. Adverse drug reactions

**Sub Unit 3: Local Anesthesia**

1. Definition of local Anesthesia
2. Ideal requirements of local Anesthesia
3. Composition of local Anesthesia

4. Uses of local Anesthesia
5. Classification of local Anesthesia
6. Instruments used to deliver local anesthesia
7. Adverse reaction (Toxicity)

**Sub Unit 4: Prescription Writing**

1. Define Prescription Writing
2. Format

**Sub Unit 3: Brief knowledge about antibiotic prophylaxis used for systemically compromised patient before dental surgical procedure**

**Practical**

**[58]**

**Unit I Routes of administration & agents.**

1. Demonstrate different routes of administration with example.
2. Recognize plaque using disclosing agents.
3. Prescribe anti-plaque agents.

**Unit II Mouthwash, tooth paste**

- 1 Prepare a mouthwash, tooth paste

## 3.4 Health Office Management

**Year: III**

**Theory Total: 58 hrs (3 hrs/week)**

**Practical Total: 39 hrs (2 hrs/week)**

**Full Marks: (Th. 50 + Pr. 50)**

**Pass Marks: (Th. 20 + Pr. 30)**

### Course Description:

This course introduces the student to concepts about management of dental health care services, as it applies to the operations of a dental health care center. This course teaches about the dental health care system in Nepal, fundamental principles of management, national dental health policy and dental health programmes, dental health manpower in Nepal, dental health related organizations and agencies, logistics management, leadership and personnel management, dental health issues and professional practice. The student will acquire the necessary knowledge and skill to deal effectively with the diverse challenges of dental health service management.

### Course Objectives:

On completion of the course the student will be able to:

1. Identify dental health care systems in Nepal.
2. Explain the theories, principles and components of dental health management.
3. Describe the national dental health policy, tell its philosophy, and identify its strengths and weaknesses.
4. Apply the principles of logistics management and quality assurance to dental health unit management.
5. Manage a dental health office/unit in the real setting.
6. Identify the different levels of dental health manpower in Nepal and describe the functions of the dental health manpower development institute.
7. Explain the goals and functions of the dental health related governmental organizations, non-governmental organizations (NGO's), international non-governmental organizations (INGO's) and international agencies that serve in Nepal.
8. Identify current national and international dental health issues.
9. Explain the code of ethics of the Dental Hygienist.

### Minimum Standards:

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### Recommended Texts:

1. Macmohan, R. et al. On Being In Charge, A guide to Management in Primary Health Care. WHO. Current edition.
2. Dixit, H. The Quest for Health, Educational Enterprise, (P) Ltd., Kathmandu. 1999.
3. Pradhananga, Y. Health Management. Council for Technical Education and Vocational Training, Bhaktapur, Nepal. 2055B.S.
4. Kamala, T. & Bishnu, R. Leadership and Management for Nurses. Health Learning Materials Centre, Tribuvan University, Kathmandu. 1990.

### Reference Texts:

1. Shrestha, B.M. Basic Principles of Management. Akshyulak Publication, Nepal. 2039B.S.
2. Modern Management Methods and the Organization of Health Services, Public Health Papers #55. WHO. 1974.

3. Inventory Control and Basic Logistics Procedure Manual on Store Management for PHC/HP and SHP Personnel. HMG/JSI. 2054B.S.
4. Park, K. Textbook of Preventive and Social Medicine. Bhandrasidas Bhanot, Jabalpur, India. 2000.
5. Health Logistics Procedure Manual. NHTC/LMD/USAID JSI, Nepal 2057.
6. Health Statistics and EPI Cold Chain Management Procedure Manual. NHTC/LMD/USAID JSI, Nepal 2057.

**Unit:1. Health care system in Nepal** [7]

**Sub-unit 1: Health Care System**

1. Define “dental health care system” and tell the purpose and characteristics of a dental health care system.
2. Describe the history of the development of dental health services in Nepal.
3. Describe ayurvedic, homeopathic and allopathic approaches to dental health care.
4. Identify situations when the most appropriate type of dental treatment might be ayurvedic care, homeopathic care, allopathic care, or a combination of these.

**Unit: 2 Fundamentals of Health Management** [15]

**Sub-unit 1: Introduction to Health Management**

1. Define management health management and dental health management
2. Differentiate between “set” management & administration.
3. Describe the function of management.

**Sub-unit 2: Planning of Health Service**

1. Describe the process and purpose of planning.
2. Describe different types of planning.
3. Explain the planning cycle.
4. Describe the steps of planning.
5. Explain the health planning system in Nepal.

**Sub-unit 3: Organizing of Health Service**

1. Describe the process and purpose of organization.
2. Identify different types of health service organizations.
3. Explain the different types dental health service in Nepal.

**Sub-unit 4: Principles of Leadership**

1. Discuss the characteristics and advantages/disadvantages of each of the leadership styles:
  - a. Autocratic
  - b. Democratic
  - c. Laissez faire

**Sub-unit 5: Staffing**

1. State the purpose of using a job description.
2. Identify the elements of a job description.
3. Tell why you support or disagree with the statement, “experienced staffs are experts in their role.”

**Sub-unit 6: Directing**

1. Describe the meaning and purpose of delegation of authority.
2. Discuss the relationship between delegation and authority.
3. Identify the process and limits of delegation.

**Sub-unit 7: Supervision**

1. Describe the objectives and methods of supervision.
2. Identify different types of tools use in supervision.
3. Describe the process of supervision.
4. Describe methods of monitoring.
5. Identify steps of a monitoring program.

**Sub-unit 8: Coordination**

1. Define coordination in terms of dental health management.
2. Identify different types of coordination.
3. Identify the techniques and processes of coordination.

**Sub-unit 9: Disaster Coordination**

1. Discuss historical events and potential for future disasters from these causes: earthquake, flooding, nuclear explosion.
2. Identify the health risks created by each of these disasters.
3. Describe the policies and procedures developed by the earthquake preparedness committee in Kathmandu.
4. Identify the major points of the national guidelines for disaster management.

**Sub-unit 10: Reporting**

1. Discuss the purpose of dental health office/unit reporting.
2. Describe the qualities of an effective dental health office report.
3. Prepare a simulated dental health office/unit report from a case example.
4. Describe the process of dental health reporting in Nepal.

**Sub-unit 11: Budgeting**

1. Discuss the purpose for using a budget in dental health management.
2. Identify and compare different types of budgets.

**Unit: 3 Dental offices Management**

**[15]**

**Sub-unit 1: Training**

1. State the purpose and definition of training.
2. Describe different types of training and tell the advantages and disadvantages of each.
3. Explain the process for assessing the need for training.
4. describe how to plan, conduct & evaluate the training program of subordinate & volunteers

**Sub-unit 2: Conduct Staff Meeting**

1. Describe how to identify the need for a meeting.
2. Tell how to decide what to include on a meeting agenda.
3. Describe how to plan for an effective meeting.
4. Describe the strategies for conducting and effective meeting.

**Sub-unit 3: Financial Management**

1. Discuss the purpose and procedures for financial management.
2. Prepare an annual budget from a simulated example.
3. Demonstrate how to maintain records of income and expenditure.
4. Demonstrate how to prepare monthly / quarterly and annual financial statements.

**Sub-unit 4: Leave Management**

1. Identify different types of employee leaves.
2. Describe the procedure for making a request for leave.
3. Demonstrate how to maintain records of staff leave.
4. Discuss the reasoning used before giving approval of staff leave.

**Sub-unit 5: Logistic Management**

1. Explain the purpose of logistics management.
2. Describe the Logistic Management Information System (LMIS) practiced in Nepal.
3. Describe the “six rights” of logistic management.
4. Explain logistic cycle.

**Sub-unit 6: Inventory Management**

1. Describe the purpose and process of physical inventory.
2. Differentiate between expendable and non-expendable goods.
3. Define storage and store standard.
4. Describe the procedure for Cold Chain storage of medical / dental supplies.
5. Discuss the essential data of logistics information.
6. Describe the process of calculating and demanding items, for both regular and emergency needs.
7. Describe the process of distributing commodities.

**Sub-unit 7: Quality Assurance**

1. Compare different definitions of quality health care.
2. Identify reasons for using the quality assurance (QA) program.
3. Identify the chief characteristics of a quality assurance program.
4. Define the term “standards” and give examples of health care standards.
5. List the ways that standards help to close the gap between actual performance and desired outcomes.
6. Give examples of ways to reduce the costs caused by poor quality health care.
7. Give examples of ways to improve patient satisfaction with services.
8. List the 4 “focus areas” of quality assurance principles.
9. Explain why the process of quality assurance is viewed as a cycle.
10. Use the methods and principles of QA to identify and plan a solution to a real health care problem.

**Sub-unit 8: Performance Evaluation of Staff**

1. Discuss the purposes and benefits of regular staff performance evaluations.

2. Explain the importance of writing a clear and complete staff job description.
3. Develop staff job descriptions for a simulated example.
4. Develop a staff performance evaluation checklist based on the job description.
5. Describe how to effectively give a job assignment.
6. Identify indicators of a good job performance.
7. Role-play ways to counsel the staff, who has poor job performance.

**Sub-unit 9: Space Management**

1. Discuss how to assess workspace required for various Dental offices activities.
2. Demonstrate how to arrange a flow chart of each activity.
3. Describe ways to arranging space as per activities.
4. Demonstrate how to make a map of a catchment area.

**Sub-unit 10: Time Management**

1. Describe how to compute staff workload.
2. Demonstrate how to prepare a timetable of Dental unit activities.
  - a. Weekly
  - b. Monthly
  - c. Quarterly
  - d. Yearly

**Sub-unit 11: Letter Writing**

1. Identify different types of letters and discuss the purposes of each.
2. Identify the good and poor attributes of a letter.
3. Write selected official letters based on a simulated example.

**Sub-unit 12: Problem Solving**

1. Define problem and problem solving.
2. Identify steps of problem solving.
3. Apply the steps of problem solving to a real or simulated case.
4. Describe common mistakes of using the problem solving method.

**Sub-unit 13: Health Management Information System (HMIS)**

1. Explain the purpose of the HMIS.
2. Identify the important benefits of this system.
3. Describe process of HMIS
4. Explain the use of the different types of HMIS forms.
5. Describe the use of the HMIS records and reports.

**Sub-unit 14: Human Resource Management (HRM)**

1. Explain the purpose of the HRM.
2. Identify the important benefits of this system.
3. Describe process of HRM
4. Explain the use of the different types of HRM forms.

**Unit: 4 Health related organization**

[5]

**Sub-unit 1: International Non-Governmental Organizations (INGO's)**

1. Identify the activities and goals of INGO are working in health sectors.

2. Identify their role in promoting the health care system.

**Sub-unit 2: National Non-Governmental Organizations (NGO's)**

1. Identify the activities and goals of NGOS working in health & health related sector.
2. Identify their roles in promotion of the health care system.

**Sub-unit 3: International Agencies**

1. Identify international bilateral & multilateral agencies.
2. Identify their roles and activities in health sectors.

**Unit: 5 National Health Policy and Health Programs [5]**

**Sub-unit 1: Various Health Programmes**

1. Identify the objectives and activities of national health programmes.

**Unit: 6 National Health Policies in Nepal [5]**

**Sub-unit 1: National Health Policy**

1. Describe components of the National Health Policy 1991.
2. Describe the current five-year plan.
3. Describe Nepal's long term health plan.

**Unit: 7. Health Issues & Professional Practice [5]**

**Sub-unit 1: Professional Practice**

1. Define and describe the code of conduct for Dental Hygienist.
2. Explain the purpose of a code of conduct.
3. Describe the formation, activities and functioning of the Nepal Health Professional Council (NHPC).

**Sub-unit 2: Entrepreneurship**

1. Discuss the concept of entrepreneurship.
2. Discuss how the community and dental office might benefit if the Dental Hygienist began a private profit making business in addition to his role as Dental health unit chief.
3. List types of businesses a Dental health unit chief might operate.
4. Identify the potential opportunities for unethical action to occur when the Dental Hygienist works simultaneously at two jobs.
5. Discuss ways to prevent unethical occurrences by the Dental Hygienist/ entrepreneur.

## 3.5 Dental Radiography & Dental Photography

Year: III

Theory Total: 39 hrs (2 hrs/week)

Practical Total: 78 hrs (4 hrs/week)

Full Marks: (Th. 50 + Pr. 50)

Pass Marks: (Th. 20 + Pr. 30)

### Course Description:

This course aims to orient the students in dental radiography and photography as these are essential components to a dental auxiliary. S/he will be taught in detail in these topics enabling them to be competent in taking dental radiographs and photographs.

### Objective:

After Completion of course the student will be able to:

1. Define, identify and describe about dental radiography and photography
2. Competent in taking various dental radiographs
3. Competent in taking various dental photographs

### Minimum Standards:

Students must achieve a minimum of 40% accuracy in theory, 60% accuracy in practical.

### Recommended Textbooks:

<b>Unit 1 Dental Radiography</b>	<b>[26]</b>
<b>Sub Unit 1: History &amp; Principle of X-ray</b>	<b>[2]</b>
1. Define X-ray	
2. Discuss invention & development of X-ray	
3. Explain the Principle of X-Ray Production	
4. Describe various use of X-ray	
5. Discuss use of x-ray in Medical Science	
6. Discuss use and importance/ application of X-Ray in Dentistry	
<b>Sub Unit 2: Dental X-ray Machine &amp; Its Major Parts with Function</b>	<b>[2]</b>
1. Discuss the various major parts of Dental X-ray Machine and draw its diagram	
2. Discuss the role and function of X-ray Tube	
3. Describe the function of Timer in X-ray machine	
4. Describe the role of X-ray Machine Arms and Stand	
<b>Sub Unit 3: Dental X-ray Accessories</b>	<b>[2]</b>
1. Describe the function of X-ray Film & Developer Solution	
2. Discuss various film Positioning devices	
3. Discuss various types of X-ray Developing machine	
4. Explain the importance/ application of Voltage Stabilizer in X-ray Machine	
<b>Sub Unit 4: IOPA X-ray taking Procedure</b>	<b>[3]</b>
1. Describe Various Position of X-ray Tube (Cone) during IOPA x-ray taking	

2. Explain the relation between X-Ray Cone and Film distance and film holding methods
3. Discuss the X-ray taking methods of upper Centrals & Laterals incisors
4. Discuss the X-ray taking methods of upper canines
5. Discuss the X-ray taking methods of upper Premolars
6. Discuss the X-ray taking methods of upper Molars
7. Discuss the X-ray taking methods of upper III Molars
8. Discuss the X-ray taking methods of lower Centrals & Laterals
9. Discuss the X-ray taking methods of lowers canines
10. Discuss the X-ray taking methods of lowers premolars
11. Discuss the X-ray taking methods of lowers Molars
12. Discuss the X-ray taking methods of Lower III molars

**Sub Unit 5: Bite wing X-ray taking Procedure [3]**

1. Describe the Advantage and Disadvantages of Bite Wing X-Ray
2. Describe the principle of Bite Wing Technique
3. Describe the X-ray film and X-ray cone position required in Bite wing technique

**Sub Unit 6: Occlusal X-ray taking Procedure [2]**

1. Explain Advantages and Disadvantages of Occlusal X-Ray
2. Discuss Occlusal X-ray Film
3. Describe the X-ray film and X-ray cone position required in Occlusal X-ray.

**Sub Unit 7: Panoramic (OPG) X-ray taking Procedure [2]**

1. Explain Advantages and Disadvantages of Panoramic X-Ray
2. Discuss Panoramic X-ray Film
3. Describe procedure of Panoramic X-Ray taking

**Sub Unit 8: Cephalogram X-ray taking Procedure [2]**

1. Explain Advantages and Disadvantages of Cephalogram X-Ray
2. Describe types of cephalometric view including frontal and lateral
3. Discuss Cephalogram X-ray Film
4. Describe procedure of cephalogram X-Ray taking

**Sub Unit 9: Other X-ray taking Procedures [2]**

1. Describe procedure of Lateral oblique view x-ray taking
2. Describe procedure of TMJ view x-ray taking
3. Describe procedure of PNS view x-ray taking

**Sub Unit 10: Radiographic Errors & Solution [2]**

1. Explain the Cone Cut error and describe the technique to avoid it.
2. Define Under Exposure. Discuss the reason and management of Under exposure
3. Define Over Exposure. List the management of over exposure of X-ray .
4. Describe the reasons of Elongation of the object in the X-ray
5. Describe the reasons of shorting of the object in the X-ray
6. Discuss Various Artifacts and its management in dental radiography

<b>Sub Unit 11: X-ray Radiation Hazards &amp; Safety</b>	<b>[2]</b>
1. Describe Various X-ray Radiation Hazards	
2. Discuss the basic safety to be taken in Dental radiography	
<b>Sub Unit 12 X-ray film processing &amp; mounting and Record keeping</b>	<b>[2]</b>
1. Explain the composition and function of Developer Solution.	
2. Explain the composition and function of Fixturer Solution	
3. Describe the methods of preparing Developing Solution	
4. Describe the methods of preparing Fixturer Solution	
5. Describe the requirement of X-ray Developing Room or Box	
6. Describe steps of X-ray processing.	
7. Discuss the methods of x-ray mounting and storing	
<b>Unit 2 Dental Photography</b>	<b>[13]</b>
<b>Sub Unit 1: Importance/ application of Clinical Photography</b>	<b>[2]</b>
1. Describe the importance/ application of clinical photographs in Dentistry	
<b>Sub Unit 2: Cameras and its Parts</b>	<b>[3]</b>
1. Describe SLR Camera and its advantages	
2. Discuss Digital Camera and its advantages	
3. Explain Camera's basic parts like Body, Lenses, and Flash.	
<b>Sub Unit 3: Principles of Photography</b>	<b>[4]</b>
1. Define Shutter and explain its importance/ application in photography	
2. Define Aperture and explain its importance/ application in photography	
3. Define Exposure and explain its importance/ application in photography	
4. Discuss Light Source in dental photography	
5. Define Depth of Field and explain its importance/ application in photography	
6. Discuss Magnification and	
7. Discuss Focus and various methods	
8. Discuss Composition in photography	
9. List Basic Armamentarium in photography and its uses	
<b>Sub Unit 4: Photographic Technique in Dentistry</b>	<b>[4]</b>
1. Describe difference between Intra Oral and Extra Oral Technique	
2. Describe Basic Steps of Intra oral photographic technique of	
a. Frontal View	
b. Right Buccal View	
c. Left Buccal View	
d. Maxillary Occlusal	
e. Mandibular Occlusal	
3. Describe Basic Steps of Extra oral photographic technique of	
a. Full Face View	
b. Profile View	
4. Describe the care and maintenance technique of dental photographic equipment	

# Practical

## Unit I Dental Radiography

1. Identify various major parts of Dental X-ray Machine and draw its diagram 2 hrs
2. Prepare X-ray machine to take IOPA x-ray 1 hrs
3. Demonstrate various X-ray cone & X-ray film positing procedures used in IOPA X-ray 2 hrs
4. Take IOPA x-ray of Upper Anterior teeth 3 hrs
5. Take IOPA x-ray of Upper Premolar teeth 3 hrs
6. Take IOPA x-ray of Upper Molar teeth 3 hrs
7. Take IOPA x-ray of Lower Anterior teeth 3 hrs
8. Take IOPA x-ray of Upper premolar teeth 3 hrs
9. Take IOPA x-ray of Upper molar teeth 3 hrs
10. Take Bite wing x-ray of Molars teeth 3 hrs
11. Take Bite wing x-ray of Pre molar teeth 3 hrs
12. Take Occlusal X-ray 3 hrs
13. Take Panoramic X-ray 2 hrs
14. Take Frontal cephalogram X-ray 2 hrs
15. Take Lateral Cephalogram x-ray 2 hrs
16. Prepare X-ray processing materials 2 hrs
17. Process exposed IOPA X-ray 3 hrs
18. Demonstrate the mounting technique 2 hrs
19. Demonstrate the disinfecting & cleaning process of X-ray machine and materials 2 hrs

## Practical site - Dental Clinic - X-ray Dept

## Unit 2 Dental Photography

1. Demonstration of various types of camera - 2 hrs
2. Identify and list major functions of Photographic Materials used in dentistry 2 hrs
3. Demonstrate SLR camera and its various parts 2 hrs
4. Demonstrate Digital Camera and its major parts 2 hrs
5. Prepare SLR camera for photography 2 hrs
6. Prepare patient for photography 2 hrs
7. Demonstrate the Steps of Intra oral photographic technique of 4 hrs
  - Frontal View
  - Right Buccal View
  - Left Buccal View
  - Maxillary Occlusal
  - Mandibular Occlusal
8. Demonstrate the Steps of Extra oral photographic technique of 2 hrs

- Full Face View
  - Profile View
9. Take various Intra Oral photographs 4 hrs
  10. Take Various Extra Oral photographs 4 hrs

**Practical site - Dental Clinic / Dept**

## **3.6 DENTAL PUBLIC HEALTH AND JURISPRUDENCE**

**Year: II**

**Theory Total: 74 hrs (4 hrs/week)**

**Practical Total: 37 hrs (2 hrs/week)**

**Full Marks: (Th. 100)**

**Pass Marks: (Th. 40)**

### **Course Description:**

This course is aimed at focusing the student's concentration on preventive oral health and the ethical issues connected with dental practice. The importance of preventive care and the means of achieving it emphasized in detail.

### **Objective:**

After Completion of course the student will be able to:

1. Acquire knowledge on preventive oral health and advocating it
2. Understand the ethical considerations surrounding the dental profession

### **Unit 1 Dental Public Health**

**[35]**

#### **Sub-Unit: 1 Introduction**

1. Define Public health and Dental Public Health
2. List the Principles followed in Dental Public Health Practice
3. List the forms of Dental Health Services
4. Briefly discuss characteristic Public Health Techniques
5. List and Discuss the Tools of Dental Public Health
6. Differentiate between Community Health Work and Private Practice

#### **Sub-Unit: 2 Dental Epidemiology**

1. Define epidemiology and describe dental epidemiology
2. List and discuss the scientific methods and tools in dental epidemiology

#### **Sub-Unit: 3 Etiology & prevention of dental caries**

1. Define prevention of dental caries
2. Enlist and discuss the etiologic factors of Dental Caries
3. Describe the role of Diet in Dental Caries
4. Briefly describe the Caries Process
5. List and briefly discuss Mechanical measures of Caries Control
6. List and briefly discuss Levels of Prevention of Dental Caries

#### **Sub-Unit: 4 Fluorides in Preventive Dentistry**

1. Describe Fluoride
2. Briefly discuss the sources of Fluoride for adults and children
3. Discuss the Metabolism of Fluoride
4. Describe the Mechanism of Action of Fluorides in Caries Reduction
5. List the Fluoride delivery methods
6. List the briefly discuss the Topical fluorides used in Preventive Dentistry
7. List the Fluoride vehicles

8. Describe the Modes of Action of Fluoride
9. Briefly discuss Toxicity of fluoride
10. Briefly discuss Community water fluoridation and school water fluoridation

**Sub-Unit: 5 Epidemiology, Etiology & Prevention of Periodontal Diseases**

1. List and briefly discuss the Etiology of Periodontal Diseases
2. List and briefly discuss the Risk factors in Periodontal Disease
3. Describe the Prevention of Periodontal Diseases

**Sub-Unit: 6 Epidemiology, Etiology & Prevention of Oral Cancer**

1. Introduction to Oral Cancer
2. Discuss the Prevalence and Incidence of Oral Cancer
3. List and briefly discuss the Etiology of Oral Cancers
4. Discuss the Prevention and Control of Oral Cancer
5. Discuss the effect of tobacco, smoking, and betel nut on oral health and in oral cancer

**Sub-Unit: 7 HIV Infection, AIDS and Oral Health**

1. Define HIV, its pathogenesis and Epidemiology
2. Discuss the oral manifestations of HIV
3. Briefly discuss the prevention measures

**Sub-Unit: 8 Indices used in Dental Epidemiology**

1. Define Indices
2. List and discuss the indices used in Oral Science Assessment, Gingival Diseases, Periodontal Disease, Dental Caries and Treatment Needs

**Sub-Unit: 9 Behavior and its management in Public Health Dentistry**

1. List and discuss the factors influencing preventive behavior
2. List the Behavioral characteristics of a normal child
3. List the categorical rating of behavioral patterns
4. Discuss how Behavior management can be achieved in public health dentistry

**Sub-Unit: 10 School Dental Health Programs**

1. Describe a school dental health program
2. List and briefly discuss the aspects of School Health Services
3. List and discuss the important elements of school dental health program
4. Define Incremental and Comprehensive dental care

**Sub-Unit: 11 Survey Procedures**

1. Define Survey and list its types
2. Define Basic oral health survey and Pathfinder Survey

**Sub-Unit: 12 Dental Manpower and Dental Auxiliary Personnel**

1. Define dentist, dental specialist
2. Define dental auxiliary and briefly discuss its classification
3. List the degrees of Supervision of Auxiliaries

**Sub-Unit: 13 Occupational Hazards and Infection Control in Dentistry**

1. Define Immunity

2. List the factors affecting disease
3. Enumerate the Transmissible Infections in Dentistry
4. List the categories of Task in relation to risk
5. Discuss in detail personal barrier technique for infection control
6. Discuss disposal of clinical waste

## **Unit 2 Extended Services**

**[20]**

### **Sub-Unit: 1 Atraumatic Restorative Treatment (ART).**

1. Introduce Atraumatic Restorative Treatment (ART)
2. Define Atraumatic Restorative Treatment (ART)
3. List instrument & material used in ART
4. Describe ART technique in details
5. Explain advantages and limitations of ART
6. Carry out referral services.

### **Sub-Unit: 2 Perform Extraction of grade III mobile permanent teeth and deciduous teeth.**

1. Define exodontias
2. Take brief history of patient
3. Explain indications, contraindications of extraction procedure.
4. Discuss briefly local & systemic contra indication during extraction
5. Explain indications and contraindications for grade III mobile teeth and deciduous teeth extraction
6. Define local anesthesia, classify, study composition, uses & complications in detail
7. Describe chair position.
8. List the instrument for grade III mobility and deciduous tooth
9. Explain principles of instrumentation
10. Describe the procedure of grade III mobility and deciduous tooth extraction
11. Explain the debridement or irrigation of socket.
12. Explain post extraction instruction,
13. Explain post extraction complication
14. Carry out referral services.

## **Unit 3 Dental Jurisprudence**

**[30]**

### **Sub-Unit: 1 Law, Rights, Jurisprudence**

1. Law
2. Classification of Laws
3. Rights
4. Legal Rights
5. Human Rights
6. Patient Rights

7. Jurisprudence

**Sub-Unit: 2 Health**

1. Definition of Health
2. Health Service in Nepal

**Sub-Unit: 3 Health related Acts and Regulations of Nepal Government**

1. Nepal Health Service Act -2053
2. Nepal Medical Council Act – 2020
3. Nepal Health Professional Council Act -2053
4. Council for Technical Education & Vocational Training Act - 2047
5. Drug Act & Regulation – 2035
6. Consumer Protection Act - 2053

**Sub-Unit: 4 Ethics**

1. Code of Ethics of Nepal Medical Council
2. Code of Ethics of Nepal Health Professional Council

**Sub-Unit: 5 Dental Health**

1. Dental Practice & Profession
2. Branches of Dentistry
3. Dental health service in Nepal
4. Dental health awareness
5. Role of Dental Health Auxiliaries
6. Duties of Dental Health Auxiliaries
7. Working fields of Dental Health Auxiliaries
8. Drugs prescribed by Dental Health Auxiliaries
9. Certification, Registration & Limitation of the Dental Health Auxiliaries
10. Professional conduct of the Dental Health Auxiliaries

**Sub-Unit:6 Dental Jurisprudence**

1. Iatrogenic problems
2. Medication errors
3. Accidents caused in dental office

**Sub-Unit: 7 Dental Fraud & Crimes**

1. Malpractice & quackery
2. Compensation cases
3. Sexual crimes & harassments caused by dental professionals

**Sub-Unit: 8 Forensic Dentistry**

1. Definition & Scope
2. Criminal cases
3. Accident cases
4. Mass disaster / Teeth identification
5. Natural death identification

**Sub-Unit: 9 National/International Dental Health Authorities**

1. Nepal Medical Council
2. Nepal Health Professional Council
3. Nepal Dental Association
4. World Health Organization
5. FDI International Dental Federation

6. American Dental Association
7. Dental Council of India
8. General Dental Council (UK)
9. International Federation of Dental Hygienists (IFDH)
10. Nepal Dental Hygienist Association

## Practical

[26]

### Unit 1 Perform Automatic Restorative Treatment (ART)

1. Identify ART cases
2. List the instruments and materials.
3. Perform proper use of instruments used in ART.
4. Carry out mixing of materials used in ART.
5. Perform the techniques of ART Restorative procedure on Phantom head.
6. Observe the techniques of ART procedure by dentist on patient.
7. Perform the techniques of ART procedure.
8. Carry out referral procedure of ART.

### Unit 2 Perform grade III mobile tooth and deciduous tooth extraction

**[Extraction of grade III mobile tooth or deciduous tooth of which all possible ways of retaining/treating/correcting (saving) has been ruled out by a qualified dentist & is only been left with an option but to extract it is being given in a written order after the patient has been delivered a test dose of LA & is also been clinically proved of safe with LA administration by him also been proved safe of all clinical condition & under his supervision. (Extraction with local infiltration only)]**

1. Identify grade III mobile permanent & deciduous cases
2. Take brief history of patient
3. Identify chair position
4. Perform sterilization of surgical area
5. Perform counseling procedure
6. Identify instruments used in grade III mobile permanent and deciduous teeth
7. Perform proper use of instruments used in grade III mobile permanent and deciduous teeth.
8. Identify post surgical materials.
9. Carry out proper use of instrument
10. Perform scientific & systematic technique of grade III mobile permanent and deciduous tooth removal.
11. Perform post extraction procedure
12. Perform post extraction instructions
13. Carry out referral procedure of extraction.

## 3.7 Comprehensive Professional Field Practice

### *Third Year - A Comprehensive Clinical Practice Objectives*

(In hospital setting)

**Year: III**

**Practical Total: 480 hrs (48 hrs/week)**

**Full Marks: (Pr. 300)**

**Pass Marks: (Th. 180)**

### **Course description**

This course is designed to help students to apply the knowledge and skills in the actual professional field practice in the clinical/hospital setting.

### **Course objective**

After completion of this course the students will be able to:

1. Give education and advice on preventive dental health to the patients/people.
2. Perform manual scaling
3. Perform ultrasonic scaling
4. Perform tooth polishing
5. Give fluoride application
6. Prescribe oral medicaments and give oral Science instructions.
7. Give dietary advice
8. Perform sterilization and maintenance of dental instruments and materials respectively
9. Assist the dental surgeon in various dental procedures
10. Take IOPA radiographs, Bite wing X-ray radiographs, Occlusal X-ray radiographs Panoramic (OPG) X-ray radiographs Cephalogram X-ray radiographs
11. Take photographs dental photographs
12. Perform basic first aid procedures in the clinical/hospital setting.
13. Overlook and manage the dental office
14. Perform Automatic Restorative Treatment (ART)
15. Perform grade III mobile teeth and deciduous teeth extraction

### **Placement schedule**

Students will be deputed to hospital and community for the period of **12 weeks** in the following subject area

S. No.	Subjects/Area
1.	Basic Periodontology
2.	Food and Nutrition
3.	Dental Pharmacology
4.	Dental Radiography and Photography
5	Dental Public Health and Jurisprudence
6	Dental Materials, Instruments and Assisting
7	Basic Medical Procedures / First Aid

## **Skills to be performed**

### **1 For the completion of the training of Paper –I the students have to:**

- 1.1. Give education and advice on preventive dental health to the patients/people.
- 1.2. Perform manual scaling at least 10 patients
- 1.3. Perform ultrasonic scaling of at least 10 patients
- 1.4. Perform tooth polishing of 5 patients
- 1.5. Give fluoride application on 2 patients.
- 1.6. Prescribe oral medicaments and give oral Science instructions 10 patients.
- 1.7. Give dietary advice to at least 5 patients.
- 1.8. Perform sterilization and maintenance of dental instruments and materials respectively
- 1.9. Assist the dental surgeon in various dental procedures in at least 10 cases
- 1.10. Take IOPA radiographs in 10 patients, Bite wing X-ray radiographs in 2 patients  
Occlusal X-ray radiographs Panoramic (OPG) X-ray radiographs Cephalogram X-ray radiographs in 1 patient each
- 1.11. Take photographs dental photographs of at least 2 patients
- 1.12. Perform basic first aid procedures in the clinical/hospital setting.
- 1.13. Overlook and manage the dental office
- 1.14. Perform Automatic Restorative Treatment (ART) at least 10 patients
- 1.15. Perform grade III mobile teeth and deciduous teeth extraction at least 10 patients
- 1.16.

***Third Year –B Comprehensive Clinical Practice Objectives***  
(In Community)

**Year: III**

**Practical Total: 480 hrs (48 hrs/week)**

**Full Marks: ( Pr. 300)**  
**Pass Marks: (Th. 180)**

**Course description**

This course is designed to help students to apply the knowledge and skills in the actual professional field practice in community.

**Course objective**

After completion of this course the students will be able to:

1. Perform manual scaling and give oral health education
  2. Give oral health education
  3. Give education and advice on preventive dental health to the patients/people.
  4. Perform manual scaling
  5. Prescribe oral medicaments and give oral Science instructions
  6. Give fluoride application .
  7. Perform sterilization and maintenance of dental instruments and materials respectively
  8. Give dietary advice
  9. Perform OHI and CPITN
  10. Perform DMFT
  11. Perform basic first aid procedures in the community.
  12. Perform Automatic Restorative Treatment (ART)
  13. Perform grade III mobile teeth and deciduous teeth extraction
- 2. After completion of the training of Paper – II the students have to:**
- 2.1. Perform manual scaling and give oral health education attending at least 2 dental camps
  - 2.2. Give oral health education by attending at least 2 school oral health programs
  - 2.3. Give education and advice on preventive dental health to the patients/people.
  - 2.4. Perform manual scaling at least 10 patients in the community
  - 2.5. Prescribe oral medicaments and give oral Science instructions 10 patients.
  - 2.6. Give fluoride application on 2 patients.
  - 2.7. Perform sterilization and maintenance of dental instruments and materials respectively
  - 2.8. Give dietary advice to 5 patients.
  - 2.9. Perform OHI and CPITN on 10 patients each
  - 2.10. Perform DMFT on 5 patients.
  - 2.11. Perform basic first aid procedures in the community.

- 2.12. Perform Automatic Restorative Treatment (ART) at least 20 patients
- 2.13. Perform grade III mobile teeth and deciduous teeth extraction at least 20 patients

### **Evaluation**

1. For both paper (Paper I&II) 50 % of each paper is allotted for internal assessment that will be given by the supervisor teacher from the college on the basis of practical site supervision plus report submitted by the student.
2. Final viva marks will be 50 of each subject. Out of which 25 marks in each paper will be given by the examiner (Dental expert) nominated by CTEVT and a rest of 25 marks of each subject will be given by the examiner (relevant subject teacher) of the institute.
3. The students must to pass the paper I and II separately.
4. The students must obtain minimum of 60 % marks in each paper both in internal assessment and final viva voice separately.

### **Person involved in Certificate in Dental curriculum development**

The Council for Technical Education and Vocational Training gratefully acknowledges the expertise and efforts of the following persons who have contributed for the development of the Certificate in Dental curriculum.

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**ART instrument and Materials**

**ART Related books for the library**

**Grade III mobile and deciduous teeth extraction related instrument and Materials**

**Grade III mobile and deciduous teeth extraction related books for the library**

14.