ABOUT THE COURSE

Dental Technology is a course which equips the Learner to be:

i. A well trained, knowledgeable Dental Assistant in Dental Clinics and all hospitals.

ii. A Dental Lab Technician, a Denturist, who fabricates and repairs Dental appliances.

A Dental assistant is a person who assists the Dental Surgeon in clinical procedures, does sterilization procedures and operates Dental X-rays. A thorough knowledge of anatomy and sterilization procedure is necessary for successful execution of his / her role.

A Dental technician is a person who acts as a bridge between the Dentist and Patient.He / she converts the expectations of the patient and the specifications of the Dentist to reality. A thorough knowledge of the theory and the practical procedures is essential for fulfilling the role of a Dental Technician successfully

For the realization of these objectives, the Dental Technology Course in Vocational Higher Secondary Education is spanned over a period of 2 years. The course is well planned and gives ample time and opportunity for the learners to develop the required skill to fulfill their respective jobs.

Dental Assistant assists the Dental Surgeon, in sterilizing,handling of instruments and various Dental materials and medicines as required. Dental Technicians also called Dental Lab Technicians, work in Laboratories fabricating dental prosthetics such as dentures, bridges and crowns.

This two year course of study leads to the Qualifications of VHSE trade Certificate in 'Dental Technology'awarded by the department of VHSE, Governtment of Kerala. The course of study consists of all essential elements required in a Dental Laboratory. Special emphasis is on Dental anatomy and morphology, the make-up of the human oral cavity, development and placement of teeth, dental prosthetics using of metallic and non-metallic materials, dental ceramics, Orthodontic etc including all the elements required for a good practicing Dental technician.

The course is designed so that the learner:

- Receives the knowledge and expertise needed for being successful in his / her role.
- Is familiar with the latest development in his / her field.

Employment potential:

At the end of the course along with 1 year apprenticeship, learner will be able to

- Assist Dental surgeon in Dental clinics, hospitals
- Work in Dental Laboratories
- Set up a Lab of his own
- Works as health educator, Dental equipment's, manufacturing unit etc.

JOB ROLES (CAREER PATH)

GOVERNMENT SECTOR

- Dental Lab Technician in all Dental hospitals and Dental colleges
- Lab Technical Assistant in VHSE Schools
- Dental Assistants in Government hospitals

PRIVATE SECTOR

- Dental Assistant in Private Dental Hospitals.
- Dental Lab Assistant.
- Office Receptionist in all Dental Hospitals.
- Dental Health Educator.
- Sales and marketing of Dental Materials.
- Lab Technical Assistant.

SELF EMPLOYMENT

- Start a Dental Lab.
- Sales and marketing of dental materials.

SUBJECT APPROACH

The science of dentistry has undergone a vast technological advancement during the past few decades. The course in Dental Technology helps the student to become a competant. Dental Laboratory Technician, Dental assistant or a Dental receptionist. A thorough knowledge of theory is imperative to excel in the laboratory procedures and keeping this in mind, the course is well planned and has a duration of two years. Here the learner is trained to render his duties in a Dental lab where he fabricates artificial dentures, crowns, partial dentures, Orthodontic appliances etc.

He /she can also work in Dental Clinic as Dental Assistant and Dental receptionist by acquiring basic knowledge of different operatory and non-operatory procedures. He/she should acquire the knowledge of Basic science and skills in Laboratory works.

By working in a Dental lab, the Dental Technician saves the time of dentist so that the Surgeon can devote his time more in clinics with his patient. The Dental surgeon and the dental technician makes a team that aims at patient satisfaction. He/She also helps in maintenance and

usage of equipments, sterilization, handling of instrument, waste disposal, assisting Dental surgeon in taking Dental X-rays and further procedures, and Front office management in Dental clinics.

Objectives

The main objective of this course is not only to train students in making prosthesis as naturally as possible, but also to make them understand the importance of rehabilitating the patients with an accurately made prosthesis within the limitations of science and technology. For this the learner requires immense skill through theoretical and practical knowledge. The main objectives of this course is as follows:

- To familiarize the learner with the latest technologies of modern Science of Dentistry.
- To enable the learner's in using new and updated diagnostic methodologies.
- To make learners able enough to adopt the methods of recovery and improving health with a service approach.
- To make people aware of the important social issues related to dental health.
- To understand the basic Anatomy and physiology of head and neck region.
- To become aware of basic Science such as physics and chemistry applicable to Dental Science.
- To have a complete knowledge of primary and permanent dentition and morphological features of individual teeth.
- Understanding the properties, characteristics and manipulation of different materials used in dentistry.
- To have a complete knowledge of fabrication of complete dentures, removable partial dentures Orthodontic appliances etc
- To enable the learner to assist a dental surgeon in Dental Clinic

Constructive approach

This approach puts forward the concept that new knowledge is evolved when previously acquired knowledge/ideas are discussed, examined and practiced.

In dental technology, ideas and concepts are formed by experiences. This can lead to greater knowledge: for example, the learner will have an idea of the time and sequence of eruption of primary and deciduous dentition. This can lead to their knowledge of estimating the age of the patient.

Their experience with pain due to dental caries will lead to his knowledge of different parts of tooth and cause of pain.

Learning Resources

In dental technology learning resources are in different areas.

- Dental Laboratory (All instruments, models and materials)
- Dental clinic/hospital (All materials and equipment's used in Dental Clinics)
- Dental camps
- On job training
- Field visit to concerned laboratories

Learning Strategies

The learning strategies in Dental technology are:

1. Group discussions
2. Demonstrations
3. Practical activity
4. Multi-media presentation
5. Survey
6. Seminar
7. Debate
8. Quiz
9. Class test

SYLLABUS

MODULE I - BASIC CONCEPT OF DENTAL TECHNOLOGY AND DENTAL ASSISTANCE

UNIT 1.1 HUMAN DENTITION

1.1.1 Basics of teeth and dentition

1.1.2 Basic anatomy of oral cavity

1.1.3 Parts of tooth

1.1.4 Dental chronology

1.1.5 Anatomical landmarks of oral cavity

UNIT 1.2 MATERIALS USED IN DENTAL LAB AND CLINIC (composition, properties and manipulation)

1.2.1 Gypsum products

1.2.2 Dental waxes

1.2.3 Separating medias

1.2.4 Denture base materials

1.2.5 Abrasives and polishing materials

1.2.6 Impression materials

1.2.7 Dental cements

1.2.8 Teeth materials

UNIT 1.3 SCIENCE OF DENTAL MATERIALS

1.3.1 Applied Mechanics

Importance of mechanics in dentistry like stress, strain, permanent deformation, elastic limit, proportional limit, modulus of elasticity, strength, color, force and power of friction.

1.3.2 Applied Chemistry

Importance of chemistry in dentistry like physical and chemical changes, mixtures and compounds, electroplating, tarnish and corrosion.

1.3.3 Applied Physics

Importance of physics in dentistry like concept of heat transmission, specific density, capillarity, spot-welders, principles of electroplating and elasticity.

UNIT 1.4 ANATOMY OF FACE AND NECK

1.4.1 Facial bones and jaw relation - All facial bone, their position, Maxilla and Mandible

1.4.2 Nerves, veins and arteries of face - Basic arteries, veins and nerves and their branches

1.4.3 Temperomandibular Joint - Bones & Liagements associated

1.4.4 Muscles of mastication

1.4.5 Movements of mandible/temporomandibular joint

1.4.6 Deglutition

1.4.7 Muscles of facial expression

UNIT 1.5 DENTAL ANATOMY

1.5.1 Incisors - maxillary and mandibular

1.5.2 Canines - maxillary and mandibular

1.5.3 Pre-molars - maxillary and mandibular

1.5.4 Molars - maxillary and mandibular

UNIT 1.6 EQUIPMENT'S USED IN DENTAL LABORATORY

1.6.1 Equipment's and instruments used in dental laboratory

Handling of equipment's in Dental Laboratory - Acryliser, Dental Lathe, Model trimmer and micro motor

UNIT 1.7 DENTAL ASSISTANCE PART 1

1.7.1 Instruments, equipment's and materials used in dental clinics

1.7.2 Sterilization and infection control in dental clinic - Basics in sterilisation, Micro organisms found, Need, Equipments and materials, Use of mask & gloves

MODULE 2

DENTAL MECHANICS - 1

FABRICATION OF COMPLETE DENTURES

UNIT 2.1 INTRODUCTION TO DENTAL MECHANICS

2.1.1. Introduction, Objectives and scope of Prosthodontics

Definition, Classification of Prosthodontics, Objectives of Prosthodontic Appliance, Scope of Prosthodontics

UNIT 2.2 FABRICATION OF COMPLETE DENTORES

2.2.1. Impression Trays

Classification, fabrication and uses of Impression trays

2.2.2. Primary impression and primary cast. Principles and factors affecting impression making - Definition of Primary Impression, Pouring of Primary cast.

2.2.3. Secondary Impression

Special tray fabrication, Border Moulding, Wash Impression, Failures in manipulation of impression.

2.2.4. Casting of secondary impression

Preservation of Impression, Beading and boxing of Impression, Preparation of cast.

2.2.5. Temporary Denture Base

Fabrication of temporary denture base with shellac and acrylic resin, Extension of temporary dentur base, Role of Temporary Denture Base

2.2.6. Occlusal Rims

Definition, Role of Temporary Denture Base, Fabrication of Denture Base

2.2.7. Jaw Relation

Orientation, Vertical and Horizontal Jaw Relation

2.2.8. Articulators and Articulation

Types of Articulators, Procedure of Articulation

2.2.9. Occlusion and Teeth Setting

Definition of Occlusion, Familiarisation of terms like overjet, over bite, key of occlusion, occlusal plane, curve of spee, balanced occlusion, centric relation, centric occlusion, Principles of teeth setting of anterior and posterior teeth

2.2.10. Finishing of Wax dentures

Waxing up, festooning, shippling, posterior palatal seal, importance of finishing wax dentures, mistakes during wax up

2.2.11. Flasking

Dental Flask, Procedure of flasking, Importance of separating media, single pour and double pour techniques, materials used, mistakes of dental flasking procedures

2.2.12. Dewaxing

Procedure of dewaxing, importance/role of dewaxing, possible mistakes

2.2.13. Packing

Procedure, Manipulation of Resin, Importance of temperature and separating media possible mistakes

2.2.14. Curing

Acryliser, procedure of curing, importance of temperature, possible mistakes

2.2.15. Deflasking

Procedure of deflasking, possible mistakes

2.2.16. Trimming and polishing

Procedure, materials used, mistakes during the procedure.

2.3. REMOVABLE PARTIAL DENTURE (RPD)

2.3.1. Introduction, terminologies, classification

Terminologies used in removable partial denture, classification of removable partial denture and identulous arches

2.3.2. Components of removable partial dentures

Parts of removable partial dentures, Maxillary and mandibular major connectors, Minor connectors, Rests - types and uses, Direct Retainers, Reciprocal stabilising components, Indirect Retainers, Denture base types, advantages and disadvantage

2.3.3. Steps in fabrication of removable partial denture

Steps in fabrication (Basic), Surveyor

2.4. FIXED PARTIAL DENTURE

2.4.1. Basics of Fixed Partial Dentures

Terminologies, Divisions, Types of fixed restorations

2.4.2. Parts of FPD and Types

Parts, classification and Indications of FPD

2.5. REPAIR OF DENTURES

2.5.1. Causes of Fracture of teeth

2.5.2. Procedure for repairing of completely fractured denture

2.5.3. Procedure for replacing fractured or separated Teeth

2.6. IMMEDIATE AND OVER DENTURES

2.6.1. Immediate Dentures

Indications and contra Indications, Advantages and disadvantages, Procedure of fabrication of immediate dentures

2.6.2. Over Dentures

Indications, Contra indications, Advantages, disadvantages and procedure of fabrication of over dentures.

2.7. DENTURE RELINING AND REBASING

2.7.1. Denture relining

Definition, Advantages, Disadvantages, Reasons Procedure of Denture Relining

2.7.2. Denture Rebasing

Definition, Advantages, Disadvantages, Reasons and procedure for denture rebasing

2.8. NEWLY LAUNCHED PRODUCTS

2.8.1. Bio functional Prosthetic system

Definition, Advantage, Difference between BPS and conventional Acrylic Dentures

2.8.2. Flexible Dentures

Definition, Advantages, Materials used, Basic procedure

2.9. ORAL AND MAXILLO FACIAL PROSTHESIS

2.9.1. Introduction to Oral and Maxillo facial prosthesis

Definition, Objectives, Types

2.10. INTRODUCTION TO DENTAL IMPLANTS

2.10.1. Definition, Identification of Parts, Advantages and disadvantages

LEARNING OUTCOMES OF MODULE 1 AND 2

After the completion of module 1 and 2 the learner will be able to attain the following skills.

MODULE 1

UNIT 1. HUMAN DENTITION

1.1.1. Differentiate between types of teeth.

1.1.2. Trim dentures accurately.

1.1.3. Educate the patient on the etiology of pain.

1.1.4. Identify the age of the patient.

1.1.5. Communicate information on specific teeth accurately and effectively.

1.1.6. Enhance the retention, stability and support and so the success of dentures.

UNIT 1.2. MATERIALS USED IN DENTAL LABORATORY AND CLINIC

1.2.1. Manipulate gypsum products successfully.

1.2.2. Minimize distortions and manipulate dental waxes accurately.

1.2.3. Identify and choose suitable denture base materials.

1.2.4. Identify, choose and apply separating medias.

1.2.5. Trim and polish dentures for retention and aesthetics.

1.2.6. Choose and manipulate different impression materials.

1.2.7. Identify, choose and manipulate different dental cements.

1.2.8. Compare and select suitable teeth material.

UNIT 1.3. THE SCIENCE OF DENTAL MATERIALS

1.3.1. Minimize deformation of materials and choose the ideal one in different fabricating and restorative procedures.

1.3.2. Prevent tarnish depending on its physical properties.

1.3.3. Handle dental materials properly.

UNIT 1.4. ANATOMY OF FACE AND NECK

1.4.1. Identify the parts of maxillary bones.

1.4.2. Identify the relieving areas of dental appliances.

1.4.3. Identify the components of Temperomandibular joint.

1.4.4. Identify action of masticatory muscles.

1.4.5. Identify the overextended parts of dentures which interfere with proper functioning of dentures.

1.4.6. Identify the parts of dentures which interfere with deglutition.

1.4.7. Identify the muscles causing facial expressions.

UNIT 1.5. DENTAL ANATOMY

1.5.1. Fabricate wax pattern for crowns, laminates and fixed partial dentures (incisors).

1.5.2. Fabricate wax pattern for crown, laminates and fixed partial dentures (canines).

1.5.3. Fabricate, wax patterns for crowns and fixed partial dentures (premolars).

1.5.4. Fabricate, wax patterns for crowns and fixed partial dentures (molars).

UNIT 1.6. EQUIPMENTS USED IN DENTAL LABORATORY

1.6.1. Identify and handle the instruments and equipment's in dental lab.

UNIT 1.7. DENTAL ASSISSTANCE - PART 1

1.7.1. Identify dental instruments and equipment's as well as assist the dental surgeon in various dental procedures.

MODULE 2

UNIT 2.1. BASICS, OBJECTIVES AND SCOPE OF PROSTHODONTICS

2.1.1. Analyze and recommend suitable prosthodontic appliances.

UNIT 2.2. FABRICATION OF COMPLETE DENTURES

2.2.1. Select, fabricate and modify the impression trays.

2.2.2. Assist a dental surgeon in taking primary impression as well as fabricate a primary cast.

2.2.3. Assist a dental surgeon in taking a secondary impression.

2.2.4. Fabricate an accurate secondary cast.

2.2.5. Fabricate a temporary denture base in acrylic as well as shellac base plate accurately.

2.2.6. Able to fabricate occlusal rims in proper dimensions.

2.2.7. Able to assist the dental surgeon in jaw relation procedures.

2.2.8. Able to select teeth esthetically and functionally.

2.2.9. Able to do articulation procedures accurately.

2.2.10. Able to set teeth in balanced occlusion with good functional and esthetic values.

2.2.11. Perform waxing up of temporary dentures accurately.

2.2.12. Do flasking procedure successfully.

2.2.13. Do dewaxing properly.

2.2.14. Do packing of acrylic resin accurately.

2.2.15. Do curing procedures properly.

2.2.16. Perform deflasking and retrieving of dentures successfully.

2.2.17. Deliver a smooth and finished denture after trimming and polishing.

UNIT 2.3 REMOVABLE PARTIAL DENTURE

2.3..1. Predict the basic design of removable partial dentures.

2.3.2. Assist the dental surgeon in designing and preparation of Removable Partial Dentures.

2.3.3. Assist the dental surgeon in fabrication of partial dentures.

UNIT 2.4 FIXED PARTIAL DENTURES

2.4.1. Assist the dental surgeon in educating the patient about the types of fixed partial dentures.

2.4.2. Identify the different parts of fixed partial dentures.

UNIT 2.5 REPAIR OF DENTURES

2.5.1. Identify the causes of broken dentures and also assist the dental surgeon in educating the dentist.

2.5.2. Repair broken dentures successfully.

2.5.3. Repair dentures with broken/separated teeth successfully.

UNIT 2.6 IMMEDIATE AND OVER DENTURES

2.6.1. Assist the dental surgeon and dental technician in fabrication of immediate dentures.

2.6.2. Assist the dental surgeon and dental technician in fabrication of over dentures.

UNIT 2.7 DENTURE RELINING AND DENTURE REBASING

2.7.1. Assist the dental surgeon and dental technician in denture relining procedures.

2.7.2. Assist the dental surgeon and dental technician in denture rebasing procedures.

UNIT 2.8 INTRODUCTION TO NEWLY LAUNCHED PRODUCTS

2.8.1. Identify Biofunctional Prosthetic System and also assist the dental surgeon in educating the patient.

2.8.2. The Identify flexible dentures and also assist the Dental Surgeon in educating the patient.

UNIT 2.9 ORAL AND MAXILLO FACIAL PROSTHESIS

2.9.1. Identify the objectives and advantages of maxillofacial prosthesis.

UNIT 2.10 DENTAL IMPLANTS

2.10.1. Identify dental implants as well as assist an implantologist in dental procedures.

Month	Name of units	Total
June	Human dentition	25
June / July	Materials used in dental labs and clinics	60
July	Science of dental materials	20
July / August	Anatomy of face and neck	25
Aug. / Sep. / Oct.	Dental anatomy	125
October	Equipments used in dental labs	25
Oct. / Nov.	Dental assistance part I	60
November	Introduction to dental mechanics	20
Nov. / Dec. / Jan. (for practicals)	Fabrication of complete dentures	174
Feb. / March	Removable partial denture	75
March	Fixed partial dentures	10
March	Repair of dentures	20
March	Immediate and over dentures	15
March	Denture relining and rebasing	15
March	Introduction to newly launched products	3
March	Maxillofacial prosthesis	5
March	Dental Impants	3

COURSE STRUCTURE

The course will consist of 4 modules.

Such as:

Module 1	Basics of Dental Technology and Dental Assistance	340 periods
Module 2	Dental Mechanics 1 Fabrication of acrylic Complete and Removable Partial Dentures	340 periods
Module 3	Dental Mechanics 2 Fabrication of Fixed Partial dentures	340 periods
Module 4	Fabrication of Orthodontic Appliances, Dental Assistance	340 periods

CLASS ROOM ACTIVITIES

- Discussion
- Practical procedures
- Notes preparation
- Chart/poster preparation
- Demonstrations
- Seminars
- Exhibitions
- Quiz
- Questionnaire
- Debate
- Class test
- Visual presentation
- Report presentation

PRACTICAL ACTIVITIES

- Case studies
- Practical Procedures
- Fabrication of Dentures
- Fabrication of Orthodontic appliances
- Field study
- Survey
- OJT

ON THE JOB TRAINING

"On the Job Training programme" plays an important and irreplaceable role in Vocational Higher Secondary Education. It enables the learner to experience personally the environment in a real work place - Dental Laboratory and Dental clinic. He/she witness the problematic situations arising in the workplace and their solutions.

On the Job Training Programme in Dental Technology course can be held in 2 sectors. This programme can be successfully held at various private dental hospitals and clinics, Governmaent dental colleges and dental laboratories etc.

Dental Clinic/Govt. or private dental hospitals

- The learner will get a basic knowledge and smooth functioning of the front office in a multi-specialty dental hospital.
- The learner will achieve a basic knowledge about human dentition in connection with their sex and age.
- The learner will get a deep knowledge in the proper use of instruments and equipments.
- The learner will be able to assist in infection control and sterilization procedure in a dental clinic.
- The learner will be in close proximity to the dental chair side procedures like taking impression of oral cavity, Jaw relation procedures, teeth selection procedures etc.
- The learner will be able to closely view the oral cavity and its associated structures.
- The learner will also be able to witness the proper way to deal with patients and to ward off their fears.

Dental Laboratory

- The learner will be able to use Gypsum products successfully.
- The learner will be able to understand different types of Dental Waxes and Denture base materials used in a Dental lab.
- The learner will be able to assist in various types of trimming and polishing works.
- The learner will be able to witness a lot of fabrication and repair procedures.
- The learner will be able to closely watch the fabrication procedures of dental prosthesis such as bridge, denture, dental implants etc.
- The learner will be able to closely observe the ceramic furnace, casting furnace and its working functions.
- The learner will be able to closely observe repair work of acrylic as well as metal prosthesis.
- The learner will be able to attain the various handling skills required in a dental laboratory.
- The learner will be able to observe the proper use of welding and soldering machines.

- The learner will be able to see a dental lab environment and the handling of various problematic situations.

Certification of skills in each Module

Module 1	Certificate in handling of laboratory and clinical materials
Module 2	Certificate in the Fabrication of Acrylic dentures
Module 3	Certificate in the Fabrication of Fixed Partial Dentures
Module 4	Certificate in the fabrication of Orthodontic Appliance and Dental Front Office management

OVERVIEW OF THE MODULE

"Introduction and Basics of Dental Technology, Dental assistance part 1" allows the learner to get a basic idea of Dental Technology, Human Dentition and Nomenclaturebefore proceeding to the more complicated Laboratory procedure in the next module. It also allows the learner to get a basic knowledge of the instruments, equipments, sterilization techniques used in dental clinics which will help him/her in assisting the Dental Surgeon after the course. At the end of the module, he/she will be able to:

- Identify the instruments, equipment's used in Dental Labs and Clinics.
- Assist in Dental Clinic during infection control and sterilization procedures.
- Identification of various types of teeth.
- Carving the teeth according to Anatomy.

MODULE 1

Basics of Dental Technology and Dental assistance 340 periods

UNIT NO.	NAME OF UNIT	PERIODS
1.1	Human Dentition	25
1.2	Materials used in Dental Lab& Clinic	60
1.3	Science of Dental Materials	20
1.4	Anatomy of Face and neck	25
1.5	Dental Anatomy	125
1.6	Equipment's used in Dental Lab and dental clinic	25
1.7	Dental Assistance Part 1	60
	TOTAL PERIODS	**340**
30% Periods - Theory session and 70%periods - practical activities		

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.1

UNIT NAME: Human Dentition Periods-25

UNIT NO.	NAME OF ELEMENTS	PERIODS
1.1.1	Introduction to teeth and oral cavity	3
1.1.2	Basic Anatomy of oral cavity	3
1.1.3	Parts of tooth	3
1.1.4	Dental Chronology	3
1.1.5	Dental Formula	3
1.1.6	Anatomical Landmarks of Oral cavity	10

30% periods - theory session and 70% practical periods

DETAILED ELEMENTS OF UNIT **Unit No. 1.1 - Human Dentition**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Introduction to teeth and oral cavity **SKILLS** • Identification of Teeth	• The learners will be able to - differentiate between types of teeth	• Collection of Extracted teeth, cast samples, chart preparation, group-discussion and notes	• Participation in Discussion. Collection of materials. • Chart assessment
Basic Anatomy of Oral Cavity **SKILLS** • Identify Anatomical landmarks and Boarders of mouth	• The learners will be able to -identify the extension of Dentures-trim dentures accurately	• Collection of cast samples, preparation of chart, Demonstration of anatomical and marks.	• Chart preparation
Parts of tooth **SKILLS** • Identification of parts of tooth	• The learners will be able to identify the different parts of teeth-educate patient in pain management	• Construction of models showing parts of tooth, video presentation	• Quiz Questionnaire based on models
Dental chronology **SKILLS** • Identify the age of a patient from his/ her cast	• The learners will be able to-identify and determine the age of patient	• Chart preparation of time eruption of teeth.	• Quiz Questionnaire based on chart
Dental Formula **SKILLS** • Able to communicate the details of specific teeth. Zygmondy's palmer system and FDI system	• The learners will be able to-identify individual teeth - communicate information of specific teeth	• Making of puzzles, a discussion tooth names in to different tooth numbering systems.	• Quiz, puzzles, group discussion, report
Anatomical landmarks of oral cavity **SKILLS** • Able to locate the extension of Dentures. Clinical significance of Anatomical land marks.The relieving and sressbearing areas of complete Dentures	• Enhance the success of Dentures	• Video/pictures presentation marking the Anatomical Landmarks. Collection of patient's cast edentulous models from Dental clinic	• Analyze and categorize different edentulous models • Evaluation of casts marked with anatomical land marks.

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.2

UNIT NAME: Materials used in Dental Lab and Clinic Periods - 60

UNIT NO.	NAME OF ELEMENTS	PERIODS
	Gypsum products	12
	Dental waxes	10
	Denture base materials	12
	Separating medias	6
	Abrasives and polishing Agents	5
	Impression materials	5
	Dental cements	5
	Teeth Materials	5

30 % periods - theory session and 70% periods - practical activities

DETAILED ELEMENTS OF UNIT **Unit No. : 1.2: Materials used in Dental Lab and clinic**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Gypsum products • Familiarization, use and manipulation of Gypsum products. **SKILLS** • Can manipulate Gypsum products for various dental procedures.	• The learner will be able to-use gypsum products successfully - identify the working time and setting time	• Making of cubes, squares of plaster of Paris, making of casts. Identification of different gypsum products. Comparison of gypsum products	• Notes preparation, making of charts showing different gypsum products its use strength etc. • Practical evaluation based on pop cubes
Dental waxes • Different types of waxes used in dentistry. **SKILLS** • Manipulation of dental waxes in various Laboratory procedure.	• The learner will be able to -.use dental waxes properly - identify the conditions that can cause distortions	• Making of cubes and squares. Making of wax spacers, teeth models, classroom discussion categories dental waxes	• Evaluation of cubes, squares. Discussion report.
Denture base Materials • Familiarization of different types of denture base materials. Introduction to newly launched products viz; BPS flexy Dentures. **SKILLS** • Ability to do curing or polymerization procedures, manipulation of denture base materials.	• The learner will be able to- identify different dentures base materials - make denture bases - select the materials in various conditions	• Manipulation of denture base resins collection of data's from magazines, newspapers, internet and collection of photograph. • Preparation of notes, charts showing. Advantages and disadvantages of various denture base materials making of dentures	• Charts assessment. • Notes.
Separating medias used in dentistry • Introduction to different types of separating medias. • Application of separating medias. **SKILLS** • Application of different types of separating media. • Identification of separating media. • Selection of suitable separating media.	• The learner can - apply separating medias - can select suitable separating medias - can identify separating medias	• Application of separating medias on cast analyze the conditions where separating medias use or not use (Discussion)	• Quiz, notes preparation • Discussion reports

DETAILED ELEMENTS OF UNIT		Unit No. : 1.2: Materials used in Dental Lab and clinic	
Ideas/Concepts/Skill	**Learning Outcomes**	**Suggested Activities**	**Assessment**
Abrasives and polishing Agents • Types of Abrasives and polishing agent classification. **SKILLS** • Proper handling of abrasive and polishing agent	• The learner can do trimming and polishing of dental appliance properly	• Trimming and polishing of dentures, models notes preparation, Identification of use of various abrasive and polishing agents.	• Practical evaluation notes based on trimming and polishing done.
• Impression materials, classification, properties, manipulation of different types of impression materials. **SKILLS** • Ability to manipulate various impression materials	*The learner will be able to:* • Manipulate the material in a proper way to get an accurate impression - Select the ideal material for each type of patients	• Chart preparation on various types of impression materials. Seminars on different types of impression materials Discussion on differences between elastic, rigid, reversible impression materials, notes	• Discussion reports • Quiz based on chart preparation • Seminar presentation
Dental Cements • Identification, manipulation of different types of dental cements. **SKILLS** • Ability to manipulate dental cements	*The learner will be able to:* • Identify different types of dental cements-manipulate dental cements	• Demonstration of dental cements and their manipulation • Seminar • Visit to dental clinic	• Quiz • Seminar report • Report on clinical visit
• Teeth materials Acrylic and porcelain materials comparison between the two type teeth materials. • Introduction to newly launched products like zirconium, lava, metal free porcelain **SKILLS** • Ability to select the teeth material	• The learner will be able to select the types of teeth according to individual cases	• Collection of different types of artificial teeth collection of photographs and analyze and categorize the different dental prosthesis, Data collection from magazines , Debate , Group activity, poster making	• Quiz • Poster preparation • Notes

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.3

UNIT NAME: Science of Dental Materials **Periods - 20**

UNIT NO.	NAME OF ELEMENTS	PERIODS
1.3.1	Applied Mechanics	7
1.3.2	Applied chemistry	6
1.3.3	Applied physics	7

30 % periods - theory session and 70% periods - practical activities

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Applied mechanics • Importance of mechanics in Dentistry, stress, strain, velocity, permanent deformation , Elastic limit, proportional limit, Modulus of elasticity, strength, color, force, power, friction. **SKILLS** • Ability to identify the properties of materials-manipulation of materials	• The learner will be able to manipulate materials with minimum deformation, choose materials for different areas of denture, choose materials most ideal esthetically	• Chart preparation on importance of stress, strain etc. on dentistry. • Discussion on selection of ideal materials for different purposes.	• Quiz based on chart • Chart evaluation • Discussion report
Applied Chemistry • Importance of applied chemistry in dentistry. Physical and chemical changes. Mixture and compound electroplating Tarnish and corrosion **SKILLS** • Ability to use the knowledge for prevention of Tarnish and corrosion-identify materials for dentures Ability to do electroplating	• The learner will be able to - choose ideal material depending on use. Prevent tarnish, corrosion and distortion.	*Discussion of* 1. Properties of metals and synthetic resins 2. Prevention of tarnish and corrosion	• Written test, Discussion report
Applied Physics • Importance of Applied Physics in Dentistry. Concept of heat, transmission of heat. Specific Dentistry. Capillarity Spot welders. Principle of Electroplating. Elasticity **SKILLS** • Ability to manipulate materials according to properties.	• The learner will be able to handle dental materials in Lab correctly to get maximum properties. Able to handle wire bending depending on the ductility and malleability of orthodontic stainless steel wires	• Documentation of specific density, thermal heat expansion of various materials. Group discussion with teacher. Interaction on various concepts of physics	• Documentation • Presentation • Quiz • Oral test

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.3

UNIT NAME: Anatomy of Face and Neck **Periods - 25**

UNIT NO.	NAME OF ELEMENTS	PERIODS
1.4.1	Facial bones and jaw relation	4
1.4.2	Nerve, vain and arteries of face	2
1.4.3	Tempero-mandibular joints	5
1.4.4	Muscles of Mastication	4
1.4.5	Movements of mandible/T.M.J	4
1.4.6	Deglutition	4
1.4.7	Muscles of Facial expression	2

30 % periods - theory session and 70% periods - practical activities

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Facial bones and jaw relation • Develop a basic idea about the facial bones and jaw relation. **SKILLS** • Ability identify the parts of maxillary and mandibular jaws	• The learners will be able to-identify teeth bearing portion alveolar process - identify the jaw bones and its structure	• Diagrams of skull, • Labeling of diagrams, • Multi-media presentation and identification of bones on the face	• Class test, • Notes preparations
Nerve, veins and Arteries of face **SKILLS** • Develop a basic idea about the nerve veins and arterial supply of face and oral structures. Ability to identify the relieving areas during the fabrication of dental prosthesis	• The learner will be able to-Able to identify the cause of pain during the usage of dental appliances. • Able to identify the relieving areas	• Making of labeled diagrams • Diagrammatic representation of course of veins, arteries and nerves of face on a Thermocol • Group discussion,	• Notes preparation and • Labeling of Diagrams • Model evaluation
Temperomandibular Joints • Structure of T M J **SKILLS** • Ability to identify the T M J problems that are caused by different dental appliances • Ability to identify the structural components of T.M.J	• The learner will be able to identify the various defect of appliances that cause T M J problems • Able to identify he components of T.M.J	• Recall previous knowledge, • Chart or • Three dimensional model preparation of T.M .J in Thermocol, • Multi-media presentation	• Quiz • Notes preparation • Questionnaire
Muscles of Mastication • Origin, insertion, nerve supply, action. **SKILLS** • Ability to - identify how masticatory muscles functions on prosthesis-restore the masticatory functions through dental appliances	• The learner will beAble - to know how masticatory muscles work - identify the causes of displacement of dentures-identify the parts of denture that can interfere with mastication	• Group discussion • On muscle function. • Multi-media presentation	• Discussion report • A short note on presentation

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Movements of mandible/T.M.J **SKILLS** • Ability to identify the technique of mastication. • Gain an idea of different movements of mandible • Effect of muscles functions on prosthesis	• The learner will be able to know how masticatory muscles functions. • Understand the causes of displacement of dentures. • Identify the overextended parts of dentures that can interfere with T.M.J functions.	• Group discussion with teachers • Interaction on possible practical application, group discussion, on the relationship between functions and retentions of appliances	• Notes • Class test • Preparation of Diagrams • Discussion report
Deglutition • Steps of deglutition **SKILLS** • Developing an idea about how deglutition occurs. • Effect of muscle functions on prosthesis	• The learner will be able to-understand how deglutition occurs • Able to identify if Dental appliances interfere with deglutition • Recall previous knowledge	• Chart preparations • General discussion • Multi-media presentation	• Notes • Questionnaire • Chart evaluation
Muscles of facial expression • Able to develop the ability of smile designing, understand esthetic functions	• The learner will be able to-Design prosthetics with, good esthetic and functional value-Modifications of appliances can bedone	• Recall the previous knowledge • General discussion on different muscles involved • Album preparation • Collection of data.	• Posters • Notes • Practical • Application • Album/poster evaluation

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.3

UNIT NAME: DENTAL ANATOMY **Periods - 125**

UNIT NO.	NAME OF ELEMENTS	PERIODS
1.5.1	Incisors-Maxillary and mandibular incisors	40
1.5.2	Canines-Maxillary and mandibular canines	20
1.5.3	Premolars-Maxillary and mandibular premolars	25
1.5.4	Molars-Maxillary and Mandibular Molars	40

30 % periods - theory session and 70% periods - practical activities

DETAILED ELEMENTS OF UNIT **Unit No. : 1.5: DENTAL ANATOMY**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Incisors • Morphology, differences between central and lateral incisors, mandibular and maxillary incisors **SKILLS** • Able to identify the teeth and its specific locations, Able to carve the teeth according to Anatomy.	• The learners will be able to construct wax pattern for crown and F.P.D • Smile designing • Teeth selection • Teeth setting	• Carving of teeth • Setting of teeth • Selection of teeth using shade guide collection of natural teeth	• Practical evaluation • Chart showing different aspects of teeth. Poster preparation
Canines • Morphology differences between upper and lower canines. **SKILLS** • Able to identify the teeth and its specific locations. • Able to carve the teeth according to Anatomy.	• The learner will be able to construct wax pattern for crown and Fixed Partial Dentures, • Smile designing • Teeth selection • Teeth setting.	• Carving of teeth • Setting of teeth • Selection of teeth using shade guide • Collection of natural teeth	• Practical-evaluation • Chart showing different aspects of teeth. • Poster preparation • Of human dentition
Premolars • Morphology differences between1stand 2nd premolars. **SKILLS** • Able to identify the teeth and its specific locations. • Able to carve the teeth according to Anatomy	• The Learner will be able to construct the wax pattern for crown and Fixed Partial Dentures • Smile designing • Teeth selection • Teeth setting	• Carving of teeth Setting of teeth • Selection of teeth using shade guide • Collection of natural teeth	• Practical - evaluation • Chart showing • Different aspects of teeth. • Poster preparation • Of human dentition.
Molars • Morphology, differences between dmolars **SKILLS** • Able to identify the teeth and its specific locations, Able to carve the teeth according to Anatomy.	• The learners will be able to construct the wax pattern for crown and Fixed Partial dentures • Smile designing • Teeth selection • Teeth setting	• Carving of teeth • Setting of teeth • Selection of teeth • Using shade guide • Collection of natural teeth	• Practical evaluation • Chart showing • Different aspects of teeth • Poster preparation

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.3

UNIT NAME: EQUIPMENT USED IN DENTAL LAB

UNIT NO.	NAME OF ELEMENTS	PERIODS
1.6.1	Equipment's and Instruments used in Dental Lab	25

DETAILED ELEMENTS OF UNIT — **Unit No. : 1.6: Equipment used in Dental lab**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Equipment's and instruments used in Dental Lab • Instruments in Dental Lab-familiarization of • Equipment in Dental Lab, acryliser, Dental lathe etc. **SKILLS** • Able to - identify instruments used in Dental Lab. • Identify the uses of the instruments used in the Dental Lab	• The Learner will be able to identify the instruments and equipment's used in Dental Lab. Use the instruments and equipment's effectively	• Identification of instruments. • Visit to Dental Lab • Picture, Album	• Notes • Questionnaire • Quiz • Album • Evaluation

SPECIFIC ELEMENTS OF UNIT

UNIT NO. 1.7

UNIT NAME: DENTAL ASSISTANCE Part - 1 Periods - 60

UNIT NO.	NAME OF ELEMENTS	PERIODS
1.7.1	Instruments, equipment's and materials used in dental clinics	30
1.7.2	Sterilization and infection control in Dental clinics	30

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
• Instruments, materials equipment's used in Dental clinics • Identification and familiarize the uses of surgical and non-surgical instruments • Materials used in surgical procedure. Eg: cotton, spirit, local anesthetic solution etc. • Identification of equipment's such as dental chair, scalar units, sterilizing equipment's-ray machine, compressor **SKILLS** • Ability to identify the different equipment's ,materials, instruments used in Dental clinics • Assist a dental surgeon after short term apprenticeship training in govt./ private sector	• The learner will be able to • Assist the Dental surgeon in the dental procedures. after apprentice • Identify the instruments	• Identification of equipment's • Visit to dental clinics • Detailed report on procedures and equipment's witnessed.	• Notes • Questionnaire • Quiz • Report on visit to dental clinic
Sterilization and infection control in Dental clinics • Basic in sterilization • Micro-organisms frequently found. • Need of sterilization • Use of mask and gloves • Sterilization equipment's • Sterilization materials **SKILLS** • Ability to identify • Different microorganisms frequently found. • Identify use of mask and gloves • Identification of sterilizing equipment's and materials • Assist a dental surgeon in sterilization • Techniques after apprenticeship • Training in government,/private sector	*The learner will be able to* • Identify sterilizing equipment's and materials • Able to work as dental assistance after a short term apprenticeship training	• Discussion on sterilization techniques • Notes preparation • Visit to Dental clinic • Pictures of various sterilization methods collected from magazines.	• Questionnaire • Album preparation • Visit-report

LIST OF PRACTICAL ACTIVITIES IN MODULE.1

Unit: 1.1

1. Edentulous and Dentulous cast preparations
2. Marking of Anatomical landmarks in upper and lower Edentulous class

Unit:1.2

1. Manipulation of dental plaster and Dental stone.
2. Estimation of mixing time, setting time of Dental stone and plaster of Paris
3. Construction of 1 inch cube and pyramids of Dental stone and Plaster of Paris, modelling wax
4. Spotters

Unit: 1.3

1. Spotters - Identification of Labeled parts

Unit: 1.5

1. Spotters -Identification of teeth (Maxillary and mandibular teeth)
2. Carving of Maxillary and mandibular teeth on wax blocks.

   Eg: (a) Incisors (b) Canines

   (c) premolars (d) Molars

UNIT:1.6

1. Identification of instruments used in Dental Lab
2. Spotters

UNIT:1.7

Identification of sterilization of sterilization instruments.

Identification of Surgical and non-surgical instruments.

List of Tools, Equipment's and Materials

Tools

- Plaster knife
- Plaster spatula
- Wax knife
- Wax spatula
- Lecron's carver
- Rubber bowl
- Chip Blower
- Diagnostic Instruments
- Extraction Instruments

- Periodontal Instruments
- Kidney trays

Equipment's

- Model Trimmer
- Lathe
- Spirit lamp
- Sterilizers
- Autoclave

Materials

- Dental Plaster
- Dental stone
- Cotton
- Spirit
- Disinfectants like Dettol
- Carving wax
- Impression Materials
- Dental cements
- Denture Base Materials
- Separating Medias

LIST OF REFERENCE TEXT-MODULE 1

- Dental materials - Properties and manipulation
- Anatomy of Head and neck by Chaurasia
- Dental Materials - Clinical application for Dental Assistant and Dental Hygienist - 2nd Edition
- Gray's Anatomy
- Wheelar's Dental Anatomy, Physiology, occlusion
- Manual of Tooth carving by Syed Sadattulla
- Clinical Aspects of Dental materials
- Phillip's Science of Dental Materials
- Dental materials: Pocket guide
- Dental Materials at a Glance
- Delmer's Dental material guide
- Dental Materials - Restorative materials, Dental resin, Miscellaneous Dental Materials and Dental Gold / alloys
- Text book of Microbiology - Ananthanarayanan
- Medical Laboratory Manual for Tropical countries - Monics chees Brough

Web sites

www.wikipedia.com

www.dentalcare.com

www.slideshare.net

www.learnerstv.com

www.webmd.com

www.journals.elsevier.com

www.sciencedirect.com

DETAILED ANALYSIS OF UNIT 1

OVERVIEW

The unit introduces the learner to the basic concepts of dentistry it deals with

- Terminologies in dentistry
- Basic anatomy of oral cavity
- Parts of tooth
- Dental formula
- Anatomical landmarks of oral cavity

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Introduction to teeth and oral cavity **SKILLS** • Identification of Teeth	*The Learners will be able to:* • Differentiate between types of teeth	• Collection of Extracted teeth, cast samples, chart preparation, group-discussion and notes	• Participation in Discussion Collection of materials
Basic Anatomy of Oral Cavity **SKILLS** • Identify Anatomical landmarks and Boarders of mouth	*The Learners will be able to:* • Identify the extension of Dentures-trim dentures accurately	• Collection of cast samples, preparation of chart, Demonstration	• Chart preparation
Parts of tooth **SKILLS** • Identification of parts of tooth	*The Learners will be able to:* • Identify the different parts of teeth-educate patient in pain management	• Construction of models showing parts of tooth, video presentation	• Quiz Questionnaire
Dental chronology **SKILLS** • Identify the age of a patient from his/her cast	*The Learners will be able to:* • Identify and determine the age of patient	• Chart preparation	• Quiz Questionnaire
Dental Formula **SKILLS** • Able to communicate the details of specific teeth. Zygmondy's palmer system and FDI system	*The Learners will be able to:* • Identify individual teeth. • Ability to communicate information of specific teeth	• Making of puzzles, a discussion tooth names in to different tooth numbering systems.	• Quiz puzzles
Anatomical landmarks of oral cavity **SKILLS** • Able to locate the extension of Dentures. Clinical significance of Anatomical land marks .The relieving and stressbearing areas of complete Dentures	• Enhance the success of Dentures	• Video/pictures presentation marking the Anatomical Landmarks. Collection of patient's cast edentulous models from Dental clinic	• Analyze and categorize different edentulous models

DETAILING OF ACTIVITIES

UNIT 1.1.1 - HUMAN DENTITION

LO: Learners will be able to:

- Identify the different types of teeth
- Differentiate between types of teeth

The teacher introduces the topic of 'Human dentition' by asking the learners about their opinion on the importance of teeth. Here, the learner can recall his/her previous experiences with dental health.The teacher facilitates in recalling previous knowledge learnt in lower classes by a simple questionnaire. The teacher familiarizes the classification and naming of teeth by relating the functions of teeth with their names. The teacher introduces the learner to

- The history of dentistry, evolution of dentistry as a separate branch.This can be done via hand outs, discussions etc.
- Importance of dentistry in medical field
- The teacher can divide the learners into different groups and assign them to

1) collect extracted teeth, cast samples from dental clinics.
2) prepare chart of their own dentition.
3) group discussion on types of teeth.

Each group presents their findings. The interacts with the learners and facilitates them to consolidate their views on human dentition.

Consolidation

- Types of teeth
- Functions of teeth
- Terminologies associated with dentist

UNIT 1.1.2 - BASIC ANATOMY OF ORAL CAVITY

LO: The learner will be able to:

- Identify the extensions of a denture.

The teacher starts the concept/topic with a general/group discussion on "Basic oral anatomy".The following discussion points are included

- Borders of oral cavity
- Contents of oral cavity
- Division of oral mucosa

The teacher interacts with learners to make them understand the objectives of learning basic oral anatomy in dental technology course. The teacher can also show them videos, diagrams of oral cavity.

He / she can divide them into groups and ask them to document the oral cavity of their partner.

CONSOLIDATION

Study of structure of oral cavity.

UNIT 1.1.3 - PARTS OF TOOTH

L.O: The learner develops the ability to identify the different parts of teeth.

The teacher explains to the learners the different parts of the tooth. He / she can use diagrams or the crossection of an extracted tooth for this purpose. He / she mentions the layers of dental enamel, dentine, and pulp and explains the pulp as a living tissue and its importance in tooth vitality.

The learners can be divided into groups and asked to prepare models of tooth in thermocol depicting the cross section of teeth.

Caries occurrence on teeth can be explained with the help of animated video depicting the incidence and progression of caries and sequalae of dental caries and its treatments. This can help to educate the learners in dental health and evoke their curiosity about dentistry.

CONSOLIDATION

- Parts of teeth
- Enamel
- Dentine
- Pulp
- Periodontium
- Vital tissues of teeth-pulp
- Dental caries and its sequalae

UNIT - 1.1.4 DENTAL CHRONOLOGY

LO: Ability to determine the age of patient.

The teacher asks leading questions to assess the knowledge of the learners regarding the eruption of various teeth. She tries to elicit responses by asking the learners of their observations on the time and sequence of eruption mainly in children in their homes and neighborhood. She can help them to pinpoint the time of eruption and exfoliation of teeth.

CONSOLIDATION

The sequence of eruption is indicative of age of patient.

UNIT 1.1.5 - DENTAL FORMULA

LO: Ability to identify specific teeth and communicate information on the teeth.

A general discussion is initiated to understand the importance of dental formula for easy communication and convenience. The teacher should be able to elicit from learner the difficulty in specifying a tooth.

For eg: The maxillary right first molar can be easily written as 16 (FDI) or 6 (palmar).

Make the learners find the need for having a dental formula in dental practice. List out and give explanations of each tooth numbering systems and ask the learners to write the tooth numbers of all tooth in Palmer Notation and FDI system.

CONSOLIDATION

- Zygmondy Palmer system
- FDI system

UNIT 1.1.6 - ANATOMICAL LANDMARKS OF ORAL CAVITY

LO: Ability to enhance the success of dentures.

The teacher can use the animated or video presentation showing

- Different types of failures of complete dentures
- Importance of clinical significance of anatomical landmarks in denture construction

Learners can be given edentulous models to mark and shade the anatomical landmarks.Group discussions can be conducted and reports can be presented. Teacher can show different patient's edentulous models and can explain the differences in edentulous anatomy of particular patients. Collect the history of success and failures of dentures from dental clinics and share with learners.

CONSOLIDATION

- Anatomical landmarks of maxillary and mandibular edentulous arch
- Clinical significance of the anatomical landmarks

REPOSITORY OF CE POSSIBILITIES

a. PROCESS ASSESSMENT

To evaluate the multidimensional competencies of the learner with regards to the practicability and nature of the subject, the following CE activities can be advised for continuous evaluation-seminar, discussion, assignment, class test, practical, project, collection etc.

In order to fulfill the process of continuous evaluation, self-assessment, peer assessment, and teacher assessment has to be done prudently. The indicators like participation, conceptual understanding, attainment skills, performance / presentation and recording / preparation are to be fixed for assessing learning process. For self-assessment, appropriate tools may be adopted.

b. PORTFOLIO ASSESSMENT

Indicators like conceptual clarity, assimilation of concepts, appropriate layout design structure, completion, originality, awareness of content, skill in communication, accuracy and perfection, systematic and sequential arrangements can be fixed for the assessing portfolios.

1) Report on importance of oral anatomy in the fabrication of dental prosthesis.
2) Collection of extracted teeth and its identification.
3) Cast samples of different types of dentition.
4) Collection of cast samples of different edentulous patients, analyze, and make a study report.
5) Construction of models showing parts of teeth.
6) Conversion of tooth names into different tooth numbering systems.
7) Marking and shading of anatomical landmarks in edentulous casts.
8) Album preparation of smiling faces of different dentitions.
9) Seminar paper and report on different stages of dentition.

c. UNIT BASED ASSESMENT

Assesment of learners after each unit can be done by the following methods-open book assessment, class test, oral test, quizzes etc.

T E QUESTIONS

1) Differentiate between the dentition of 3 years old and 9 years old boy.

(Score 3)

LO: 1.1.4

2) 61, 22 are tooth numbers of human dentition. Identify these two teeth.

LO: 1.1.5 *(Score 2)*

3) Identify the teeth from the dental formula given below:

a) 6 (palmar system) *(Score 5)*

LO: 1.1.5

b) Tooth No: A (Universal system)

c) 36 (FDI system)

d) 52 (FDI system)

e) c (Palmer system)

4) Match the following. *(Score 5)*

LO: 1.1.4

a)	4	(i)	Cusp of Carrabelli
b)	6	(ii)	2 Cusps
c)	5	(iii)	5 Cusps
d)	1	(iv)	mandibular 2nd premolar
e)	6	(v)	Cingulum

5) Identify the age of a patient whose dentition is represented below.

LO: 1.1.4 *(Score: 3)*

6 E D C B 1	A B C D E 6
6 E D C B 1	1 B C D E 6

6) Identify the muscles that help in mastication of food.Write the origin,insertion and action of the muscles.

LO: 1.4.4 *(Score: 4)*

LIST OF TOOLS AND EQUIPMENTS AND MATERIALS

Module I & II

Tools

- Plaster knife
- Plaster spatula
- Wax knife
- Wax spatula
- Lecron'sscarver
- Rubber bowl (big and small)
- Chip blower

Equipments

- Model trimmer
- Lathe
- Spirit lamp
- Acryliser
- Articulator

Materials

- Dental plaster
- Dental stone
- Modeling wax
- Shellac base plate
- Sticky wax
- Separating media
- Spirit
- Carving wax

EQUIPMENTS TO BE ACQUIRED

Module I

1. Instruments used in clinics
   - A. Diagnostic instruments (10 sets)
     - i. Mouth mirror
     - ii. Straight probe
     - iii. Curved probe
     - iv. Periodontal probe
   - B. Extraction Instruments (5 sets)
     - i. Periostal elevators
     - ii. Straight elevators
     - iii. Forceps set
     - iv. Suture thread and needle
     - v. Artery forceps
     - vi. Needle holder
     - vii. Kidney trays
   - C. Root canal instruments (5 sets)
   - D. Impression materials of different sizes and types.
   - E. Glass slab and cement spatula (5 sets)
2. Equipments
   - i. Sterilizers
3. Materials
   - i. Impression materials like alginate, impression compound, zinc oxide euginon impression paste.
   - ii. Surgical materials like cotton, spirit and local anesthetic solution.

iii. Dental cements like zinc phosphate, zinc oxide euginon.

iv. Gutta-percha

v. Restorative materials like amalgam, glass ionomer and composite.

4. Models of skull, facial bones and skull bone.

5. Temperomadibular joint model.

Module 2

Dental Mechanic. 1 (Prosthodontics)

UNIT NO.	NAME OF UNITS	PERIODS
2.1	Introduction to Dental mechanic	20
2.2	Fabrication of complete Denture	174
2.3	Removable Partial Denture	75
2.4	Fixed Partial Denture	10
2.5	Repair of Dentures	20
2.6	Immediate and over Dentures	15
2.7	Denture Relining and Rebasing	15
2.8	Introduction to Newly launched products - Dentres	3
2.9	Maxillofacial prosthesis	5
2.10	Introduction to Dental implants	3

30 % periods - theory session and 70% periods - practical activities

OVERVIEW OF MODULE - 2

Module 2 Dental Mechanics is the lifeline of Dental technology Course. Dental Mechanics include the Techniques of fabrication and repair of complete dentures, oral and maxillofacial prosthesis, implants introduction of newly launched products such as Bio functional prosthetics system (BPS) and flexible removable dentures. It also deals with appliances that are often needed to replace areas of bone of tissue and restore oral functions such as swallowing, speech and chewing. At the completion of the module the learner will be skilled in.

1. Fabrication and repairs of complete denture
2. Fabrication and repair of Removable partial Dentures
3. Assist in fabrication of immediate and over dentures
4. Assist in relining and rebasing cases

He/she will also be able to assist the Dental surgeon in educating the patient on Dental Implants.

SPECIFIC ELEMENTS OF UNIT

Module - 2

Unit 2.1 - Introduction, objectives and scope of Prosthodontics

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.1	Introduction, objectives and scope of prosthodontics	20

DETAILED ELEMENTS OF UNIT — **Unit No 2.1 - Introduction to Dental Mechanics**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
• Definition and classification of prosthodontics • Objectives of prosthdontic Appliance • Scope of Prosthodontics **SKILLS** • Ability to Understand the consequence of edentulous state • Able to identify the objectives of prosthodontic application	*The learners will be able to* • Suggest restorative appliances according to need and usage	• Charts of Eduntulous and partially edentulous casts. • Video • Collection of photographs / diagrams of different dental prosthesis	• Notes preparation • Album preparation • Notes

SPECIFIC ELEMENTS OF UNIT

Unit 2.2 - Fabrication of complete denture

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.2.1	Impression Trays	10
2.2.2.	Primary impression and primary cast	15
2.2.3	Secondary impression	5
2.2.4	Casting of secondary impression	7
2.2.5	Temporary Denture base	10
2.2.6	Occulusal Rims	10
2.2.7	Jaw relation	5
2.2.8	Selection of teeth	5
2.2.9	Articulators and Articulation	10
2.2.10	Occlusion and Teeth setting	60
2.2.11	Finishing of wax dentures	4
2.2.12	Flasking	5
2.2.13	Dewaxing	5
2.2.14	Packing	8
2.2.15	Curing	5
2.2.16	Deflasking	5
2.2.17	Trimming and polishing	5

DETAILED ELEMENTS OF UNIT — **Unit No. : 2.2: Fabrication of Complete denture**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Impression Trays • Classification, fabrication and uses of impression Trays. **SKILLS** • Ability to select import trays • Fabricate impression Trays to improve retention • Recognize the role of impression trays in the success of Dentures	*The learners will be able to* • Select impression trays for specific patients. • Fabricate special trays and other trays according to specification • Improve the quality of impression by modifying the trays if needed	• Practical Activity like fabrication of special trays. • Charts/models showing different types of Trays. • Recall he previous material of Denture base materials. • Compare and contrast different impression trays	• Practical evaluation • Chart/model evaluation • Questionnaire
Primary impression and primary cast • Principles and factors effecting impression making • Definition of primary impression • Primary impression materials - manipulation techniques **Preparation of primary cast** **SKILLS** • Ability to Manipulate impression • Material adequately • Fabricate primary cast • Understand the importance of proper impression	*The learners will be able to* • Mix/manipulate impression materials accurately. • Fabricate primary cast. • Assist a dentist in making a primary impression	• Role play dealing with manipulation of impression material • Loading of impression materials. • Fabrication of primary cast accuracy.	• Evaluation of correct technique demonstrated • Practical evaluation • Model evaluation
Secondary impression • Special tray Fabrication • Border molding • Wash impression • Failures in manipulation of impression **SKILLS** Ability to • Prepare accurate special tray with proper extensions.	*The learner will be able to* • Fabricate special tray accurately • Manipulate wash impression material • Identify the working time, mixing time of various impression material • Manipulate impression material Successfully • Assist the dentist in taking a secondary impression • Identify the conditions of distortion of impression • Select suitable impression material.	• General discussion in Laboratory and clinical procedures • Video, pictures, presentation • Discussion on clinical and laboratory procedures • Practical activity	• Report presentation • Recollecting previous knowledge • Report presentation • Practical evaluation

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Casting of impression • Preservation of impression • Beading and boxing of impression • Preparation of cast **SKILLS** • Ability to do Beading, boxing • Fabricate on accurate master cast • Understand the importance of accurate master cast in Denture success	• The learner will be able to do Beading and boxing of impression. • Fabricate accurate secondary cast • Recognize the chance of distortion • Assist dentist in clinical procedures.	• Practical Activities • Beading and Boxing • Secondary cast preparation	• Practical evaluation
Temporary Denture Base • Fabrication of temporary denture Base with shellac and acrylic resin • Extension of temporary denture base in denture success **SKILLS** • Ability to Manipulation of shellac base plate and self cure acrylic resin • Construct temporary Denture base accurately with proper extensions. • Fabricate complete denture with proper retension	*The learners will be able to* • Fabricate accurate denture base with proper extensions. • Fabricate accurate complete denture	• Practical activity • Construction of temporary denture base on secondary cast • Visit to dental lab and collection of datas.	• Practical evaluation • Data presentation
Occlusal Rims • Definition of occlusal Rims • Preparation of Occlusal rims **SKILLS** • Ability to prepare occlusal rims to proper extensions.	*The learners will be able to* • Prepare occlusal rims in any type of arch forms.	• Practical activity • Collection of edentulous models from clinics and preparation of occlusal rims • Preparation of occlusal rims on model cast	• Practical evaluation • Notes preparation
Jaw relation • Vertical, orientation, Horizontal jaw relation **SKILLS** • Develop the skill to assist dental Surgeon	*The learner will be able to* • Assist Dental Surgeon in Jaw relation procedure	• Visit to Dental Clinics • Visualize video program, internet	• Notes • Report on clinic visit

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
• Selection of teeth • Principles to be considered where selection of teeth **SKILLS** • Ability to recognize ideal teeth based on patients features. • Understand the importance of teeth selection and dental aesthetics	*The learner will be able to* • Select teeth according to patients face, color, size and shape • Fabricate dentures aesthetically • Assist dentist in teeth selection	• Visit to dental clinic to witness procedure • Collection of photos of including different size, shape and color of face and importance of teeth. • Chart preparation showing ideal teeth - size, shape and color for each type of face .	• Report on visit • Chart/Album evaluation • Notes
Articulators and Articulation • Familiarization with types of articulator • Types of articulators • Procedure of articulation	*The learner will be able to* • Select ideal articulator • Do articulation procedure accurately	• Practical activity • Visit to manufacture and trading centers. • Visit to dental lab	• Practical evaluation • Note • Activity log
Occlusion and teeth setting • Definition of occlusion • Familiarization of terms like over jet, Over bite, key of occlusion, occlusal plane, curve of spee-balanced occlusion, centric relation • Centric occlusion • Principles of teeth setting of anterior and posterior teeth **SKILLS** • Ability to recognize the balanced occlusion • Set teeth with key of occlusion over jet, overbite • Recognize the importance of setting of teeth according to principles for success of dentures. • Evaluate the occlusion of a complete dentures • Analyze and correct defect in setting of teeth	*The learner will be able to* • Set teeth in occlused rims in centric relation. • Fabricate dentures with good functional and aesthetics values and in balanced occlusion • Correct defects in complete in relation to occlusion and aesthetics	• Discussion with teachers on the difference of setting of teeth in patients with different s with different occlusion. • Photo collection of different types of occlusion • Visit to dental lab • Setting of teeth in balanced occlusion	• Discussion reports • Report on visit • Album preparation • Practical evaluation

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Finishing of wax denture • Familiarization with procedure of waxing up festooning, stippling and establishment of posterior palatal seal • Importance of finishing of denture in the success of complete denture • Mistakes during waxing up **SKILLS** Ability to • Wax up dentures to get proper thickness • Do festooning and stippling to get proper anatomical contour of gingival and aesthetics establish posterior palate seal for good retention of dentures • Fabricate complete denture with proper functional and aesthetic value.	*The learners will be able to:* • Perform waxing up accurately. • Fabricate dentures with good functional aesthetic values and retention • Fabricate self-cleansing hygienic dentures.	• Practical activity • Collection of photograph of denture with and without festooning and stippling • Discussion with teacher's participation on difference between dentures with festooning and without festooning. • Festooning and steppling to be done on wax dentures	• Photo album and chart preparation • Discussion report • Practical evaluation
Flasking • Familiarization with dental flask. • Procedure of flasking • Importance of separating media • Single pour and double pour techniques • Materials used • Mistakes of Dental flasking procedures **SKILLS** • Ability to Do a successful • Flasking procedure with wax dentures • Apply separating media correctly during different stages of flasking • Choose between single and double pour techniques. • Understand the importance of flaskingprocedure in fabricating a successful dentures • Fabricate a successful denture with minimum mistakes in flasking procedure.	*The learners will be able to:* • Assist dental technician in dental lab • Do flasking procedure accurately. • Fabricating dentures with accurate function and aesthetics • Minimize flasking defects • Correct defects of flasking if needed.	• Practical Activity • Visit to dental lab to witness procedure • Collection of picture samples of different types of flask • Video of flasking procedures to be viewed from internet. www.youtube.com • General discussion on importance of flasking procedure in successful denture and possible mistakes associated with procedure.	• Practical evaluation • Individual report on visit • Fabrication of pictures or Album • Consolidated report on the procedure.

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Dewaxing • Familiarization with procedure of dewaxing • Importance of dewaxing • Correct procedure for application of separating media. • Possible mistakes during dewaxing • Importance of temperature **SKILLS** • Ability to do dewaxing procedures accurately	*The learners will be able to:* • Do dewaxing procedure s accurately • Assist the dental technician in dental lab • Evaluate the mistakes and takes steps to prevent them.	• Practical activity • Visit to Dental lab • Discussion on application on types of separating media and importance of temperature, possible mistakes with teacher guidance	• Practical evaluation • Report on visit to dental lab • Notes • Activity log • Quiz
Packing • Familiarization with procedure • Manipulation of Resin • Importance of temperature and separating media • Possible mistakes **SKILLS** • Ability to do packing procedure accurately • Minimize mistakes associated with packing • Proper separating media • Fabricate a successful denture after following proper packing procedures	*The learner will be able to* • Assist dental technician in dental labs. • Do packing procedures accurately • Minimize packing defects. • Fabricate denture • Analyze defects of denture and correct mistakes.	• Practical activity • Discussion on possible mistakes and prevention with teacher participation • Visit to Dental lab • Documentation on procedure	• Practical evaluation • Report • Quiz • Notes
Curing • Familiarization with acriyliser • Procedure of curing • Importance of temperature • Possible mistakes in curing procedures **SKILLS** • Ability to Do curing procedures after dewaxing accurately • Set temperature for optimum curing • Minimize mistakes during curing • Understand the importance of accurate curing procedure in the success of denture • Fabricate a successful denture.	*The learners will be able to* • Assist dental technician in dental lab • Do curing procedure accurately • Fabricate denture with accurate function and aesthetics • Identify reasons for curing defects and ways to prevent them.	• Practical activity • Visit to Dental lab • Documentation on procedure Discussion of (1) Proper curing procedure (2) Possible mistakes (3) Ways of prevention • Video of curing procedure to be viewed from • www.youtube.com	• Practical evaluation • Report on visiting • Notes verification • Discussion report • Class test, recollection on previous materials. • Report on procedure

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Deflasking • Familiarization with deflasking with procedures • Possible mistakes during deflasking **SKILLS** • Ability to Do deflaskingprocedures accurately • Identify mistakes during deflasking • Understand importance of deflasking in denture fabrication • Fabrication of a successful denture	*The learner will be able to* • Assist dental technician during deflasking procedure accurately • Evaluate the mistakes and takes steps to prevent them • Fabricate denture with accurate function and aesthetics	• Practical activity • Visit dental lab • Video of deflasking procedure • Documentation of procedure steps.	• Practical evaluation • Notes evaluation • Questionnaire • Report on visit to Dental lab
Trimming and polishing • Procedure of trimming and polishing • Materials used • Mistakes during trimming and polishing **SKILLS** • Ability to Perform trimming and polishing accurately • Fabricate dentures accurately with proper extensions.	*The learners will be able to* • Assist dental technician during trimming and polishing • Perform trimming and polishing by conserving the extension of denture to get maximum retention • Identify mistakes and rectify them. • Fabricate complete dentures with accurate functional and aesthetics values	• Practical Activity • Visit to dental Lab • Video of procedure • Documentation of steps of curing • General discussion on mistakes and prevention	• Practical evaluation • Report • Notes evaluation • Quiz • Discussion reports

SPECIFIC ELEMENTS OF UNIT

Unit 2.3 - Removable Partial Denture (RPD)

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.3.1.	Introduction, Terminologyand classification	10
2.3.2.	Components of removable partial denture	25
2.3.3.	Steps in fabrication of removable partial denture	40

DETAILED ELEMENTS OF UNIT **Unit No. : 1.3: Science of Dental Materials**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Introduction terminology and classification • Familiarization with terminologies • Classification of removable partial dentures • Classification of edentulous arches **SKILLS** • Ability to identify parts of RPD and structures associated with removable partial dentures • Classify RPD based on support ,retention and treatment modality • Identify the different types of partial dentures used in different types of edentulous arches • Differentiate between fixed partial dentures and removable partial dentures	*The learners will be able to* • Differentiate between removable partial dentures and fixed partial dentures • Recognize different structures associated with RPD. • Predict a basic design of RPD for a particular patient • Assist dental technician in designing RPD	• Fabrication of models of different classes of edentulous arch. • Chart preparation of important terminologies associated with RPD. • Discussion on objectives and indications contraindications of RPD • Collection of patient picture of different classes of edentulous arch.	• Evaluation of models • Questionnaire • Report presentation • Picture album evaluation
Components of removable partial dentures • Familiarization of different parts of RPD and its role. • Maxillary and mandibular major connectors their designs, classification and use. • Minor connectors. • Rest - different types and uses. • Direct retainers and reciprocal stabilizing components-intra coronal retainers, extra coronal retainers, types, principles and requirements of clasps. • Indirect retainers denture bases types, advantages and disadvantages.	*The learners will be able to* • Identify components of RPD • Suggest and fabricate parts of RPD according to situational needs • Choose ideal material for RPD • Assist in designing RPD.	• Visit to dental labs • Identification and discussion of parts of RPD on models. • Chart preparation or picture collection of components of RPD, Different types of RPD • Video presentation of components of RPD viewed from www.youtbe.com • General Discussion on parts, role of parts of RPD • Preparation of models of components of RPD	• Report Presentation • Questionnaire • Album/Chart preparation • Class test • Report on video • Discussion reports

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
SKILLS • Ability to Identity parts of RPD. • To design, rests, claps according to need. • Understand the various roles of various components of RPD. • Choose between metallic and acrylic denture bases. • Suggest areas of placement of rest, claps etc.			
Steps in Fabrication of removable partial denture • Familiarize with the steps in construction of RPD • Examination of oral cavity • Surgical Treatment if any. • Diagnostic impression and diagnostic cast • Surveyor, parts of surveyor, Surveying of master cast. • Designing of RPD, Survey lines • Mouth preparation • Final preparation • Survey of Master cast • Alteration, duplication and blackout • Wax pattern, casting and finishing • Try in of frame work • Recording of Jew relation • Teeth selection • Finishing and evaluation **SKILLS** • Ability to Make diagnostic casts • Survey diagnostic casts • Survey diagnostic • Casts • Design RPD • Assist in mouth preparation • Survey master cast • Perform steps for fabrication of RPD	*The learners will be able to* • Assist dental technician in steps of RDP FABRICATION • Assist Dentist in clinical steps of RPD fabrication. • Analyze and survey the master cast and design RPD • Fabricate an RPD according to specifications of patient and dentist with minimum, failures • Advice the dentist on the best design of RPD for it to have optimum functions.	• Practical activity • Visit to Dental lab • Video foot age of surveyor, parts of surveyor, surveying of master cast • Charts preparation • Showing steps of RPD fabrication • Open discussion on Surveying of cast • Models of surveyor done in thermocol.	• Practical evaluation • Visit report • Chart evaluation • Quiz • Questionnaire • Oral class test • Model evaluation

SPECIFIC ELEMENTS OF UNIT

Unit 2.4 - Fixed partial Dentures

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.4.1	Basics of fixed dentures	4
2.4.2	Parts of fixed partial dentures and types of FPD	6

DETAILED ELEMENTS OF UNIT		Unit No. 2.4: Fixed partial Dentures	
Ideas/Concepts/Skill	**Learning Outcomes**	**Suggested Activities**	**Assessment**
Introduction to FPD • Familiarization with terminologies • Divisions of Prosthodontics • Types of fixed restoration **SKILLS** • Ability to understand the different types of prosthesis fabricated in different divisions of prosthodontics recognize different types of coronal restorations. • Fabricate different types of coronal restorations.	*The learners will be able to* • Understand the types of restoration needed • Assist the Dental technician in crown preparation • To fabricate different types of coronal restorations. • Assist the Dentist in Dental clinics • Educate the patients on the crown restorations needed	• Visit to Dental clinic and dental lab • Chart preparation of different types of restorations or picture album • Models of different types of restoration fabricated. • Documentation or notes	• Report on visit • Chart presentation • Model evaluation • Questinnaire
Parts of FPD and types • Familiarise with parts of FPD • Familiarise classification of FPD's • Indication of FPD'S **SKILLS** • Ability to Understand the different parts of FPD. • Understand the functions of the different parts of FPD • Evaluate and decide different kinds of FPD's according to indications and contra indications.	*The learners will be able to* • Educate the patients the types of FPD's • Depending on the case • Assist the Dental surgeon • Assist in Dental Lab	• Survey on "which is better RDF/ FPD • Diagrams/pictures collection of different types of FPD's • Preparation of working models of typical three unit FPD	• Survey report • Picture, album evaluation • Questionnaire • Practical evaluation

SPECIFIC ELEMENTS OF UNIT

Unit 2.5 - Repair of Dentures

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.5.1	Causes of fracture of teeth	5
2.5.2	Procedure of repairing completely fractured denture	15
2.5.3	Procedure for replacing fractured or separated teeth.	5

DETAILED ELEMENTS OF UNIT **Unit 2.5: Repair of Dentures**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Causes of fracture of teeth • Constructional causes • Causes in the mouth • Causes out of mouth • Causes of tooth separation **SKILLS** • Ability to understand the causes of fracture • Rectify the cause	*The learners will be able to* • Understand the cause of fractures • Educate the patients on ways of prevention	• Chart • Survey of causes of fracture • Group discussion with teachers co-operation on different types of causes of fracture • Collection of pictures depicting different causes of fracture	• Chart analysation • Survey report • Discussion report • Questionnaire
Procedure for repairing completely fractured Denture • Familiarization of step by step procedure of denture repair **SKILLS** • Ability to • Repair a broken Denture • Prevent further fracture of Denture • Understand the importance of each step in denture repair	*The learners will be able to* • Repair a broken denture • Educate the patients to prevent further fracture	• Practical Activity • Broken denture are issued and learners are asked to go through the steps of denture repair • Visit to Dental Lab.	• Practical evaluation • Visit report
• Procedure for replacing fractured/ separated teeth. • Procedure for anterior teeth • Procedure for posterior teeth **SKILLS** Ability to • Replace the separated teeth. • To prevent further separation, breakage of teeth	*The learner will be able to* • Repair a denture with broken/ separated teeth. • Assist the dentist/in educating the patients to minimize fracture	• Practical Activity • Learners are issued with dentures with broken/separated teeth. • Visit a dental Lab	• Practical evaluation • Visit report • Notes evaluation

SPECIFIC ELEMENTS OF UNIT

Unit 2.6 - Immediate and over dentures

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.6.1	Immediate Dentures	8
2.6.2	Over Denture	7

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Immediate dentures • Indications and contra indications • Advantages, disadvantages • Procedure **SKILLS** • Ability to analyze patient case and advise patients. • Fabricate immediate dentures for patients.	*The learner will be able to* • Assist the Dental in educating the patient on the feasibility, advantages and disadvantages of immediate dentures. • Fabricate the immediate denture for patient case	• Visit to Dental clinic & dental lab. • Video showing • Chair side and Lab procedure	• Report on visit • Questionnaire • Quiz • Class test
Over dentures • Indication and contra indications • Advantages and disadvantages • Procedure **SKILLS** Ability to • Advice the patient on advantages and disadvantages of over dentures • Fabrication of over denture	*The learner will be able to* • Assist the dental surgeon in educating the patient on the feasibility, advantages and disadvantages of over dentures • Fabricate over dentures for patient case	• Visit to dental clinic and Dental lab • Video showing • Chair side and lab procedure	• Report on visit • Questionnaire • Quiz • Class test

SPECIFIC ELEMENTS OF UNIT

Unit 2.7 - Dental Relining and Rebasing

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.7.1	Denture Relining	5
2.7.2	Denture Rebasing	10

DETAILED ELEMENTS OF UNIT — **Unit No 2.7: Denture Relining and Rebasing**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Denture Relining • Definition • Advantage and disadvantages • Reasons • Procedure **SKILLS** Ability to • Understand the steps of relining • Assist the dental Surgeon in chair side procedure • Fabrication of denture in lab	*The learners will be able to* • Educate the patients on relining procedures. • Assist the dental surgeon in chair side techniques • Tightening of dentures in dental lab.	• Visit the Dental Clinic and Dental Lab • Video showing Procedures	• Visit report • Notes evaluation • Questionnaire • Video report evaluation
Denture Rebasing • Definition • Advantages and disadvantages • Reasons • Procedure **SKILLS** Ability to • Understand the steps of rebasing • Assist the dental surgeon • Educate the patient on rebasing and relining procedure • Aesthetically change the denture base area.	*The learners will be able to* • Assist the Dentist in helping the patients to choose between Relining, Rebasing. • Assist the dental Surgeon in chair side produce • Rebasing the Denture in Dental Lab.	Discussion on • "Which is advantages relining or Rebasing". • Survey on "Rebasing, Relining or Refabrication of dentures" • Video showing procedure of rebasing	• Discussion Report • Survey report • Class test • Video report evaluation

SPECIFIC ELEMENTS OF UNIT

Unit 2.8 - Introduction to Newly launched products - Dentures

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.8.1	BPS (Bio functional prosthetic system)	4
2.8.2	Flexible Dentures	3

DETAILED ELEMENTS OF UNIT	Unit No. 2.8: Introduction to Newly launched products - Dentures		
Ideas/Concepts/Skill	**Learning Outcomes**	**Suggested Activities**	**Assessment**
Introduction to Bio functional Prosthetic System (BPS) • Definition of BPS • Advantage of BPS • Differences between BPS and conventional acrylic dentures **SKILLS** • Ability to have an awareness about BPS • The scope of BPS • The differences between BPS and conventional acrylic dentures.	*Learners will be able to* • An idea about BPS • Its scope • Its advantage • Differences between BPS and acrylic dentures.	• Video presentation • Visit to Dental clinic and dental labs. • Survey • Collect the experiences of denture wearing patients • Seminar	• Notes • Preparation • Survey evaluation • Seminar report
Introduction to flexible dentures (RPD) • What is flexible dentures • Advantages of flexible dentures • Materials used **SKILLS** Able to identify • A flexible Denture • The advantages of flexile dentures over conventional acrylic and metallic Removable partial dentures	*The learners can identify* • Flexible dentures • The advantages of flexible dentures	• Video presentation • Visit to dental clinics and Dental lab • Seminar • Collection of photographs.	• Notes • Seminar Report • Album preparation

SPECIFIC ELEMENTS OF UNIT

Unit 2.9 - Oral and Maxillofacial prosthesis

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.9.1	Introduction to Oral and maxillofacial prosthesis	5

DETAILED ELEMENTS OF UNIT — **Unit No 2.9: Oral and Maxillofacial prosthesis**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
• Introduction to oral and maxillofacial prosthesis • What is an oral and maxillofacial prosthesis • Its objectives • Types **SKILLS** • Ability to understand the objectives of oral and maxillofacial prosthesis. • Ability to assist in Lab produce after attaining apprenticeship training	*The learner will be able to* • Understand the objectives of oral and maxillofacial prosthesis. • Assist in lab procedure after attaining apprenticeship training	• Visit to Dental lab • Internet • Video presentation • Seminar • Group discussion	• Note • Seminar report • Presentation • Discussion report

SPECIFIC ELEMENTS OF UNIT

Unit 2.10 - Introduction to Dental implants

UNIT NO.	NAME OF ELEMENTS	PERIODS
2.10.1	Introduction to Dental implants	3

DETAILED ELEMENTS OF UNIT — **Unit No 2.10: Oral and Maxillofacial prosthesis**

Ideas/Concepts/Skill	Learning Outcomes	Suggested Activities	Assessment
Dental Implants • Introduction, definition of Dental implants • Identification of its parts • Disadvantages and advantages of dental implants **SKILLS** • Ability to define a dental implants • Ability to assist an implantologist after apprenticeship in the field	*The learner will be able to* • Able to identify dental implants • Able to assist an implantologist • Able to assist in lab procedure • After attaining apprenticeship • Training	• Visit to Dental Lab • Internal • Video presentation • Seminar • Group discussion	• Notes • Seminar report • Discussion report

List of Practical Activity

UNIT 2.2

- Construction of special Tray
- Construction of temporary Denture Base
- Fabrication of occlusal rims
- Articulation
- Setting of teeth - 3 setups to be done to key of occlusion
- Waxing up and festooning
- Flasking of wax Dentures
- Dewaxing
- Packing of acrylic dentures
- Divesting, Trimming and polishing of Dentures

UNIT 2.3

- Construct of clasps
- Construction of different types of major connectors
- Designing of RPD

UNIT 2.4

- Spotters - Identification of parts of FPD

UNIT 2.5

- Repair of broken Dentures
- Repair of dentures with missing teeth

UNIT 2.8

- Spotters - Identification of newly launched materials

UNIT 2.10

- Spotters - Identification of parts of Dental implants

List of tools, Equipments and materials

Tools

- Plaster knife
- Plaster spatula
- Wax knife
- Wax spatula
- Lecron's carver
- Rubber bowl

Equipments

- Model Trimmer
- Lathe
- Spirit Lamp
- Dental flask with clamp
- Surveyor
- Articulator
- Acryliser

Materials

- Dental stone
- Dental plaster
- Modeling wax
- Shellac Base plate
- Acrylic Resin
- Pumice powder
- Spirit
- Cold mold seal

LIST OF REFERENCE TEXT - MODULE - 2

- Clinical text on complete denture prosthodontics by - Nithin Kumar Agarwal, RuchirTripathi
- Dental Lab procedures vol.1, vol.2, vol.3. - Kenneth D Rudd and others
- Essentials of complete denture prosthodontics - Sheldon Winkler
- Me Kraken's removable ,partial Denture prosthodontic – Alan B Carr, David T Brown
- Fundamentals of fixed prosthodontics - Shilling burg, HerbertT, David A
- Boucher's Prosthodontics treatment for edentulous patients - George A Carb

Web sites

www.wikipedia.com

www.dentalcare.com

www.slideshare.net

www.learnerstv.com

www.webmd.com

www.journals.elsevier.com

www.sciencedirect.com

MODULE - 3

MODULE NAME: DENTAL MECHANIC - 2

UNIT NO.	NAME OF ELEMENTS	PERIODS
3.1	Dental materials and equipments	45
3.2	Cast duplication and die preparation	43
3.3	Wax pattern	45
3.4	Pontics	45
3.5	Investing	45
3.6	Burn out	40
3.7	Casting	42
3.8	Devesting and finishing	35
	Total periods	**340**

30% periods - theory session and 70% periods - practical activities included (OJT)

MODULE - 3

MODULE NAME: FABRICATION OF ORTHODONTIC APPLIANCES

UNIT NO.	NAME OF ELEMENTS	PERIODS
4.1	Equipments &units	30
4.2	Introduction to orthodontics	20
4.3	Fixed orthodontics appliances	25
4.4	Removable orthodontic appliances	65
4.5	Space maintananers	35
4.6	Myo functional appliances	35
4.7	Habit breaking appliances	35
4.8	Retainers	25
4.9	Appliances fabrication	35
4.10	Dental assistant - Part. II	35
	Total periods	**340**

30% periods - theory session and 70% periods - practical activities included (OJT)