

# D H 328C: CLINICAL DENTAL HYGIENE THEORY III

## Foothill College Course Outline of Record

Heading	Value
<b>Effective Term:</b>	Summer 2024
<b>Units:</b>	2
<b>Hours:</b>	1 lecture, 3 laboratory per week (48 total per quarter)
<b>Advisory:</b>	Not open to students with credit in D H 75C.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	Not Repeatable

## Student Learning Outcomes

- The student will prepare an action plan for successfully passing the dental hygiene licensing examination.
- The student will assess and identify extraoral/intraoral for preparation of the dental hygiene licensing examination.
- The student will assess and identify acceptable patients according to criteria for the dental hygiene licensing examination.

## Description

Discussion and demonstration of advanced and supplemental dental hygiene functions, including magnetostrictive ultrasonic technology, piezoelectric technology, air polishing, and instrumentation of dental implants. Supportive course to reinforce and amplify the knowledge and skills needed to perform dental hygiene procedures. Intended for students in the Dental Hygiene Baccalaureate Degree Program; enrollment is limited to students accepted in the program.

## Course Objectives

The student will be able to:

1. Demonstrate advanced ultrasonic techniques for dental hygiene treatment based on individualized patient needs.
2. Incorporate air polishing into dental hygiene care plan.
3. Assess the patient with dental implants and provide appropriate dental hygiene care.
4. Adhere to standard infection and hazard control protocols during all procedures.
5. Apply the principles of law and ethics to the practice of dental hygiene.

## Course Content

1. Advanced ultrasonic techniques (Lec, Lab)
  - a. Magnetostrictive ultrasonic technology
    - i. Advanced inserts
      1. Powerline insert indicated for removal of heavy calculus deposits

2. Left and right curved inserts indicated for removal of calculus in furcations and root concavities
- b. Indication and contraindication for use
  - c. Techniques
    - i. Adaptation of ultrasonic tip
    - ii. Oblique/transverse (curet like)
    - iii. Vertical (probe like)
    - iv. Calculus removal technique
    - v. Top down approach
  - d. Piezoelectric technology
    - i. Types of piezoelectric tips
      1. Universal Scaling Tip H1 - indicated for the remove of supragingival light to moderate calculus deposits
      2. Heavy Scaling Tip H2 - indicated for the removal of heavy supragingival calculus deposits
      3. Slim Tip H4 - indicated for better access for difficult to reach calculus deposits
  - e. Anatomy of the tip
    - i. Lateral sides
    - ii. Point
    - iii. Spray settings
  - f. Benefits of use
    - i. Increased patient comfort
    - ii. Less noise
    - iii. Less water spray
  - g. Technique
    - i. Liner stroke pattern
    - ii. Adaptation of lateral side
  - h. Indications for use
    - i. Requires less water to control heat
    - ii. May be more comfortable for patients with breathing conditions
    - iii. Can be used on all patients with pacemakers
    - iv. Handpiece is wider and ergonomically designed
  - i. Contraindications for use
    - i. Patients with communicable diseases
    - ii. Dysphagia
    - iii. Hemophilia patients
    - iv. Exposed dentinal surface
    - v. Recently erupted tooth
    - vi. Restored teeth
  - j. Equipment maintenance and infection control procedures
    - i. Use of barriers and disinfection of equipment
    - ii. Antimicrobial preprocedural rinses
    - iii. High volume evacuation devices
      1. Ergofinger
      2. Ergovac High Volume Evacuation tips
2. Guided biofilm therapy (Lec, Lab)
    - a. Indications and contraindications for use
    - b. Agents
      - i. Glycine powder
      - ii. Erythritol powder
    - c. Benefits of each powder
    - d. PPE for operator

- i. Face shield
  - ii. n95 respirator or level 3 surgical mask
- e. Maintenance of equipment
- f. Techniques
  - i. Anterior teeth
  - ii. Posterior teeth
- g. Aerosol reduction procedure
  - i. High volume evacuation devices
- h. Infection control procedures
- 3. Dental implants (Lec, Lab)
  - a. Types of dental implants
  - b. Parts of an implant
    - i. Prosthesis crown
    - ii. Screw
    - iii. Abutment
    - iv. Implant post
  - c. Osseointegration
    - i. Incorporation by woven bone formation
    - ii. Adaption of bone mass to load (lamellar and parallel-fibers bone deposition)
    - iii. Adaption of bone structure to load (bone remodeling)
  - d. Indications for dental implants
    - i. Complete edentulous patient
    - ii. Patient with oral deformities
    - iii. Partially edentulous
  - e. Contraindications for dental implants
    - i. Systemic diseases (uncontrolled diabetes, pathological disorder)
    - ii. Tobacco use
    - iii. Immune compromised patients
    - iv. Poor oral hygiene
    - v. Stress/psychological problems
    - vi. Traumatic occlusion
    - vii. Pathological disorders of bone
    - viii. Xerostomia
  - f. Assessment of implant health
    - i. Mobility
    - ii. Inflammation
    - iii. Suppuration
    - iv. Bleeding
    - v. Probing implants
  - g. Clinical signs of peri-implant disease
    - i. Peri-implantitis
      - 1. Bleeding on probing
      - 2. Suppuration
      - 3. Probing depth greater than 4mm
      - 4. Radiographic evidence of bone loss beyond marginal bone loss
  - h. Peri-mucositis
    - i. Bleeding on probing
    - ii. Suppuration
    - iii. Probing depth less than 4mm
    - iv. No evidence of radiographic bone loss
  - i. Current research on implants and maintenance

- j. Instrumentation technique for dental implants
    - i. Adaption of dental hygiene instruments on implant
      - 1. Instrument against the implant post
    - ii. Probing technique on implant
      - 1. Lighter pressure
      - 2. Penetration depth of probe
      - 3. Less tissue attachment strength
  - k. Armamentarium used during dental treatment
    - i. Types of instruments
      - 1. Titanium instruments
      - 2. Gold plated instruments
      - 3. Subgingival air polishing
- 4. Infection and hazard control protocols (Lab)
  - a. Maintenance and sterilization of dental hygiene instruments
- 5. Principles of law and ethics (Lec, Lab)
  - a. Patient records
  - b. Informed consents
  - c. Legal duties of California dental hygienist
  - d. Follow up care
  - e. Patient confidentiality
  - f. Professional ethics and interactions with faculty, patients, and peers
  - g. Cultural competency

## Lab Content

Practice advanced techniques for clinical procedures for patient care: advanced magnetostrictive technology, piezoelectric technology, air polishing, and dental implant techniques.

## Special Facilities and/or Equipment

1. Multimedia classroom, dental hygiene clinic.
2. Student instrument kit, personal protective barriers, expendable supplies kit, sterilization lab.
3. When taught as an online/hybrid course, access to computer with email software and hardware; email address.

## Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Examinations:

1. Complete written examinations on subject areas to a level of 75%

Clinical proficiencies:

1. As recorded on a process evaluation, complete clinical proficiencies to a level of 75%

a. Magnetostrictive technique

b. Piezoelectric technique

c. Air polishing

d. Instrumentation of dental implants

Project requirements:

1. Complete lab assignments for ultrasonic technology, air polishing, and dental implants to a level of 75%

Class participation:

1. Students must prepare for all classes as demonstrated by having all necessary supplies and equipment in lecture and lab and by participating in class discussions

## Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture  
Laboratory

## Representative Text(s) and Other Materials

Bowen, D., and J. Pieren. Darby and Walsh Dental Hygiene Theory and Practice, 5th ed.. 2019.

Nield-Gehrig. Fundamentals of Periodontal Instrumentation, 8th ed.. 2019.

Nield-Gehrig, J., D. Shin, and D. Willman. Foundations of Periodontics for the Dental Hygienist, 5th ed.. 2018.

Hoang, L.. Clinical Dental Hygiene Theory Manual III. 2024.

## Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Read chapters in textbooks on ultrasonic, air polishing, and dental implants
2. Read sections weekly in course syllabus
3. Practice advanced clinical techniques on typodont including the ultrasonic, piezoelectric, air polishing, dental implants

## Discipline(s)

Dental Technology