### CLINICAL SCIENCES FOR THE DENTAL ASSISTANT

**Course Syllabus**

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<th>Course Number:</th>
<th>THRP-0285E</th>
<th>OHLAP Credit:</th>
<th>No</th>
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<tr>
<td>OCAS Code:</td>
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<tr>
<td>Course Length:</td>
<td>346 Hours</td>
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<tr>
<td>Career Cluster:</td>
<td>Health Science</td>
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<td>Career Pathway:</td>
<td>Therapeutic Sciences</td>
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<td>Career Major(s):</td>
<td>Dental Assistant</td>
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**Pre-requisite(s):**

The content of this course prepares the student to participate in laboratory and clinical experiences necessary to develop the skills to become a dental assistant. The course provides classroom and laboratory instruction.

**Textbooks:**


**Online Components:**

  - [http://evolve.elsevier.com/staticPages/s_index.html](http://evolve.elsevier.com/staticPages/s_index.html), Interactive Web Site, Sanders Elsevier
  - [http://tulsatech.blackboard.com/](http://tulsatech.blackboard.com/)

**Software:**

- Eaglesoft 16.0 17.0 Dental Practice Management Software

**Course Objectives:**

**A. General Dentistry**

1. Describe the three major parts of most hand instruments.
2. State the functions of the three instruments found in the basic setup used for all dental procedures.
3. State the function of at least 10 dental hand instruments.
4. Demonstrate the preparation of a sterile pre-set tray for a restorative procedure.
5. Assemble plastic instruments for use.

**B. Legal and Ethical Issues**

1. Explain legal responsibilities and regulations in the dental profession.
2. Analyze ethical and legal consideration in dental assisting.
3. Describe how dental records are maintained in accordance with legal guidelines.

**C. Dental Charting**
1. Demonstrate charting a dental examination using the symbols commonly employed to record dental conditions and treatment. ¹
2. Prepare a patient chart. ¹
3. Describe the process of recording a periodontal examination. ¹
4. Chart a periodontal examination. ¹

D. Specialty Procedures ¹
1. Describe the specialty of oral and maxillofacial surgery. ¹
2. Identify from set-up the specialized instruments used in oral surgery. ¹
3. Describe the dental assistant's role in oral surgery. ¹
4. Describe the steps in a forceps extraction. ¹
5. Provide presurgery and postsurgery instructions to the patient. ¹
6. Prepare the operatory for oral surgical procedures. ¹
7. Define these terms: coronal polish, dental prophylaxis, scaling, root planing, gingival curettage, gingivectomy, and gingivoplasty. ¹
8. Identify from set-up specialized instruments used in periodontics: periodontal probe, scalers, curettes, pocket marker, and periodontal knives. ¹
9. State the use of the ultrasonic scaler, prophy angle, rubber cup, and brushes. ¹
10. Define dental prophylaxis procedures. ¹
11. Describe the specialty of endodontics. ¹
12. Identify from set-up the specialized instruments used in endodontics. ¹
13. Describe the specialized diagnostic tests used in an endodontic examination. ¹
14. State the need for a sterile field in endodontic treatment. ¹
15. Describe assisting during endodontic treatment. ¹
16. Define canal preparation and filling of the root canal. ¹
17. Describe preventive, interceptive, and corrective orthodontics. ¹
18. Identify from set-up specialized instrumentation used in orthodontics. ¹
19. Describe the role of orthodontic separators.¹
20. Describe the steps in the selection, cementation, and removal of orthodontic bands.¹
21. Describe the steps in the placement, ligation, and removal of arch wire. ¹
22. Describe the steps in the direct bonding of orthodontic brackets. ¹
23. State the patient population served by pediatric dentistry and describe the special concerns of the pediatric dentist. ¹
24. Describe the steps in the application of pit and fissure sealants. ¹
25. Describe the use of fixed and removable space maintainers. ¹
26. Describe the steps in making a vacuum-formed custom mouth guard. ¹
27. Describe the application of topical fluoride using a commercial fluoride gel and trays. ¹
28. Differentiate between fixed and removable prosthetics. ¹
29. Discuss the components of a partial removable denture. ¹
30. Discuss the components of a complete removable denture. ¹
31. Describe the steps in prosthodontic procedures. ¹
32. Discuss the care of complete and partial removable dentures. ¹
33. Discuss the preparation of secondary impressions. ¹
34. Discuss the shade and mold of the artificial teeth. ¹
35. Discuss the try-in of the wax set-up. ¹

E. Practice Management
1. Describe the functions of the reception area, business office, and dental laboratory.
2. Describe office procedures.
3. Describe radiology and laboratory techniques and procedures.
4. Describe a plan to maintain and control supplies.
5. Discuss maintenance of dental equipment/instruments.
6. Describe proper storage and disposal of supplies.
7. Describe minor accounting functions necessary in a dental office.
8. Explain the importance of quality assurance in dental practice.

F. Chairside Assisting
1. Describe the role of the dental assistant as an administrative assistant, as a chairside assistant in four-handed dentistry, as a coordinating assistant in six-handed dentistry, and as an extended function dental assistant.¹
2. Describe the basic components of a complete dental examination.¹
3. Describe the function of treatment plans and the case presentation visit.¹
4. List and describe Black's classification of cavities.¹
5. State where the left and right sides of the dental arches appear on anatomic and geometric dental diagrams.¹
6. Demonstrate taking and recording a patient's vital signs.¹
7. Perform an oral examination.¹
8. Discuss advantages and any disadvantages of amalgam restorations.¹
9. Define these terms related to amalgam restorations: mechanical retention, microleakage, pulpal floor, and the names of the cavity walls (buccal, dentinal, distal, facial, gingival, incisal, labial, lingual, mesial, proximal).¹
10. Discuss the steps in cavity preparation.¹
11. Define these terms related to the structure of amalgam: alloy, mercury, high-copper alloy, mercury to alloy ratios, and trituration.¹
12. Identify the parts of a Tofflemire retainer.¹
13. Demonstrate the assembly of a Tofflemire retainer.¹
14. Demonstrate preparing a pre-set tray for the placement of an amalgam restoration.¹
15. Demonstrate assisting during the preparation and placement of an amalgam restoration.¹
16. Differentiate between inlays, onlays, and full crowns.¹
17. Describe the components of a fixed bridge and state the functions of each.¹
18. Describe the steps in the preparation and cementation of a single crown.¹
19. Describe the steps in the preparation and cementation of a fixed bridge.¹
20. Describe the use of gingival retraction cord.¹
21. Describe the use of temporary coverage between crown and bridge visits.¹
22. Demonstrate preparing trays, mixing alginate impression material, loading trays, and assisting the operator during the taking of maxillary and mandibular impressions.¹
23. Describe the technique for taking a wax-bite registration.¹
24. Describe the three major steps involved in producing accurate dental diagnostic casts.¹
25. Demonstrate creating maxillary and mandibular diagnostic casts from alginate impressions using the double-pour method.¹
26. Demonstrate trimming, finishing, and labeling maxillary and mandibular diagnostic casts.¹
27. Describe cosmetic dentistry and define these related terms: bonding, enamel bonding, dentin bonding, veneer, direct-bonded resin veneer, indirect-bonded resin veneer, porcelain veneer.¹
28. State four patient responsibilities in maintaining cosmetic restorations.¹
29. Describe the major characteristics of the three forms of composites.¹
30. Differentiate between self-cured and light-cured polymerizing resins.¹
31. List the special precautions to be taken while placing a cosmetic restoration.¹
32. Describe the steps in preparation and placement of a direct-bonded veneer.¹
33. Describe the steps in preparation and placement of an indirect-bonded veneer.

34. Describe the steps in preparation and placement of a Class II posterior composite restoration.

35. Demonstrate assisting with a Class II posterior composite restoration.

36. Demonstrate assisting during the preparation and placement of a Class III anterior composite restoration.

G. Dental Environmental Hazards

1. Name and describe the three Occupational Safety and Health Administration (OSHA) and the Environmental Protection Agency (EPA) programs of primary concern to the dental assistant.

2. Discuss current laws concerning "hazardous waste management," as they relate to the dental industry.

3. Describe compliance with OSHA Hazards of Communication Regulations.

4. Describe the tasks that may be assigned to employees classified as being at risk for occupational exposure to blood or other potentially infectious materials.

5. Discuss the properties and the uses of these disinfectants: glutaraldehyde, chlorine dioxide, iodophors, synthetic phenol compounds, and sodium hypochlorite.

6. Explain infection control procedures for dental radiography, impressions, and laboratory cases.

7. Demonstrate the use of protective attire for dental personnel, including latex gloves, masks, and protective eyewear.

8. Name and describe the two kinds of sterilization most frequently used in the dental office.

9. Describe the two major sections of the sterilization area and the flow of instruments as they are cleaned and sterilized.

10. Demonstrate the preparation (cleaning and wrapping) of instruments for sterilization by autoclaving and dry heat.

11. Practice universal precautions.

12. Operate an autoclave.

13. Operate an ultrasonic cleaner.


15. List and describe the major parts of a program to comply with the OSHA Hazards Communication Regulation.

16. State the purpose and use of Material Safety Data Sheets (MSDS) and labeling requirements.

17. Describe the appropriate handling of acid etch solutions and gels, asbestos, flammable liquids, organic chemicals, gypsum products, formaldehyde, nitrous oxide and oxygen gases, mercury, cast alloys, photographic chemicals, pickling solutions, and visible light-cured materials.

18. Describe the appropriate method of discarding these medical wastes in the dental office: sharps, extracted teeth, items contaminated with blood and saliva.

19. Demonstrate and describe the steps to be taken in treating a needle-stick injury.

20. Describe the use of protective barriers in the operatory.

H. Oral Health Education and Preventive Dentistry

1. State the primary goal of preventive dentistry.

2. Demonstrate proper brushing and flossing techniques.

3. Describe the use of fluorides in water, fluoride supplements, topical applications, dentifrices, and mouth rinses.

4. Describe dental plaque and state its role in causing dental disease.
5. Describe instructing a patient in the use of disclosing tablets, the Bass technique of tooth brushing, and the use of dental floss.¹
6. Describe the use of interdental cleanser, Perio-Aid, Stim-u-Dent, oral irrigation devices, therapeutic oral rinses.¹
7. Describe personal oral habits that may compromise general health.¹
8. Identify pre/post treatment instruction needed for patients.¹
9. Discuss plaque control techniques.¹

I. Dental and Medical Emergencies
   1. Maintain current certification in cardiopulmonary resuscitation and first aid.¹
   2. Describe the types of emergencies that might be encountered in a dental office.¹
   3. Describe the basic staff qualifications for managing medical emergencies.¹
   4. Describe types of supplies that might be found in a minimal emergency kit.¹
   5. Differentiate between administering oxygen and the use of positive-pressure ventilation.¹
   6. State the six basic emergency steps to be taken until help arrives.¹
   7. Describe the emergency treatment for anaphylactic shock, angina pectoris, diabetic acidosis, insulin shock, and an epileptic seizure.¹
   8. List the five classifications of fractured teeth and describe the treatment for avulsed teeth.¹
   9. Demonstrate the treatment for syncope, hyperventilation, and postural hypotension when the patient feels faint.¹

J. Perform Oral Evacuation and Instrument Transfer.
   1. Describe the four operating zones and the uses of each.
   2. State the precautions for use of the high volume evacuator (HVE) tip.
   3. Demonstrate assembling, adjusting, and positioning of the HVE tip in each area of the oral cavity.
   4. Demonstrate retraction of the cheeks, tongue and lips.
   5. Demonstrate passing instruments in the position of use.
   6. Demonstrate the exchange of instruments, handpieces, and materials at chairside.

K. Basic Dental Operatory Procedures
   1. Discuss major pieces of equipment found in the dental operatory.
   2. Describe the use and care for each of these pieces of equipment.
   3. Describe the morning and evening routines for operatory care.
   4. Describe the correct seated position of the operator and assistant at chairside.
   5. Prepare the operatory area.
   6. Demonstrate seating the patient, placing the patient in the supine position, and restoring the patient to an upright position.
   7. Demonstrate operatory care between patients to ensure infection control.
   8. Operate operatory equipment.

L. Assist in the Administration of Pharmacological Agents.
   1. Differentiate between the brand names and generic names of drugs.
   2. Discuss abused drugs and why it is a concern to the dental practice.
   3. Describe the placement of a topical anesthetic prior to the administration of a local anesthetic.
   4. Describe obtaining local anesthesia by block and infiltration injection techniques.
   5. Identify commonly used dental block and infiltration injection sites by name and location in the oral cavity.
   6. Describe and locate the areas generally anesthetized by commonly used dental blocks and infiltrations.
   7. Describe the use of nitrous oxide-oxygen relative analgesia in dentistry.
8. Demonstrate the preparation of a local anesthetic syringe.
9. Demonstrate passing and receiving the anesthetic syringe at chairside.

M. Use of Dental Dam Materials
1. State indications for using the dental dam.
2. Describe the specialized types of dental dam and dental dam clamps.
3. Explain punching dental dam for placement on single or multiple maxillary or mandibular teeth.
4. Describe the placement, inversion, ad removal of dental dam.

N. Prepare for a successful job search.¹
1. Develop proper interview skills.²
2. Create a plan for the job search.²
3. Design and create effective job search documents.²
4. Respond to job offers.²
5. Exercise skills in time management.²

O. The student will demonstrate employability skills, including dependability, patient/client centered behavior, self-motivation-initiative, positive attitude, and adherence to policies.²

¹ ODCTE Objective
² TTC required soft skills objective.

All unmarked objectives are TTC instructor developed.

The class will primarily be taught by the lecture and demonstration method and supported by various media materials to address various learning styles. There will be question and answer sessions over material covered in lecture and media presentations. Supervised lab time is provided for students to complete required projects.

Grading Procedures:
1. Students are graded on theory and lab practice and performance.
2. The PDA program requires courses to be passed at 70% or better. For secondary students to be eligible for advanced standing in the PDA program, the course must be passed at eighty (80%) or better.
3. Grading scale: A=90-100%, B=80-89%, C=70-79%, D=60-69%, F=50-59%.

Description of Classroom, Laboratories, and Equipment:
Tulsa Technology Center campuses are owned and operated by Tulsa Technology Center School District No. 18. All programs provide students the opportunity to work with professionally certified instructors in modern, well-equipped facilities.

Available Certifications/College Credit:
The student may be eligible to take state, national or industry exam after completion of the program. Tulsa Tech students may be able to earn college credit based on their knowledge gained at Tech. The process of earning credit through Prior Learning Assessment (PLA) will be determined after completion with Tech and based on certification, credential or knowledge of the subject. See program counselor for additional information.

College Credit Eligibility:
The student must maintain a grade point average of 3.0 or better.