

Course Objectives/Course Outline
Spokane Community College

Course Title: *Dental Restorative Techniques*

Prefix and Course Number: DENT 116

Course Learning Outcomes:

By the end of this course, a student should be able to:

1. Identify the role of the dental assistant through demonstration of knowledge of the discovery and development of materials used in dentistry, safety of handling of materials, properties of materials, cavity preparation and caries detectors, cements, bases and liners, final restorative materials and the importance of a matrix band.
2. Use dental nomenclature relating to dental chairside equipment and procedures orally and in writing.
3. Define and spell terminology used in this unit.
4. Identify when and where to use personal protective equipment prior to, during and after treatment following OSHA/WISHA standards.
5. Be familiar with Washington State Department of Health Scope of Practice as related to chairside procedures allowable in Washington State for placement of cements, bases and liners.
6. Demonstrate professional interpersonal communication both verbal and nonverbal with instructors and peers.

Course Outline:

Discovery and development of dental materials

- 1) Identify the role of the ADA Council of Materials and Devices.
 - a) List four criteria that must be met in order to have materials acceptable for use in the mouth.
- 2) Describe procedures for handling hazardous materials.
 - a) Describe safety consideration when handling dental materials according manufacturers directions, clinical procedures policy and OSHA/WISHA standards.

Properties of dental cements

- a) Describe primary factors that make demands on dental materials.
- b) Describe the structure and properties of dental materials in the following terms: force (tensile, compressive, shearing), stress (tensile, compressive, shearing). Strain, elasticity, elastic limit, ultimate strength, ductility, malleability, flow, hardness and relaxation.
- c) Describe thermal conductivity and thermal expansion and state why these are important in dentistry.
- d) Describe Light cure, self-cure, dual cure.

Cavity preparations and caries detectors:

- a) Describe the principles of cavity preparation steps.
- b) Identify types of caries detectors.

Cements, Bases, Liners:

- 1) Explain the uses of each of the following types of dental material
 - a) (e.g., luting agent, bases, temporary restoration, pulp capping, etchants, bonding agents)
- 2) List chemical composition and physical characteristics of each type of dental material.
 - i) Zinc phosphate cement
 - ii) Zinc oxide and eugenol cements
 - iii) Polycarboxylate cements
 - iv) Glass ionomers
 - v) Resin cements
 - vi) Calcium hydroxide
 - vii) Core build up materials

- viii) Bonding agents
 - ix) Desensitizers
 - x) Caries detectors
 - xi) Etchant
- b) Explain the difference between cavity varnishes and cavity liners.
 - c) Explain the indications and contraindications for the various cements, bases, varnishes, liners, etchants, bonding agents, desensitizers and caries detectors.
 - d) Explain the factors which influence the chemical and physical characteristic of each type of cement, cavity varnish, cavity liner, etchants, and bonding agents.
 - i) (ex: moisture, temperature, mixing speed, ratio of components).
 - e) Explain storage requirements for each type of material.

Final Restorative Materials:

- 1) Identify final restoration materials such as amalgam, composites and glass ionomers.
- 2) Explain the factors which influence the chemical composition and physical characteristics of amalgam, composite and glass ionomers.
- 3) List the precautions which must be taken when preparing materials.
- 4) Explain the safety precautions necessary to utilize when using and disposing of mercury.
- 5) Describe various bonding techniques.
- 6) Describe smear layer and the composition and use of etchant.

Matrix Bands:

- 1) Define and describe the use of matrices.
- 2) Identify a tofflemire matrix band and retainer.