

**J. Sargeant Reynolds Community College  
Course Content Summary**

**Course Prefix and Number:** DNL 220

**Credits:** 6

**Course Title:** Introduction to Dental Ceramics

**Course Description:** Introduces students to ceramic and porcelain-fused-to-metal dental restorations. Includes techniques of design and fabrication of metal substructures followed by ceramic firing techniques. Discusses various ceramic alloy and all-ceramic crown techniques. Students observe fabrication procedure demonstrations and receive one-on-one instruction during part of the laboratory sessions. Lecture 3 hours. Laboratory 9 hours. Total 12 hours per week.

**General Course Purpose:** Students must be able to perform ceramic fixed restoration techniques in order to function as a dental laboratory technician in a commercial dental laboratory or dental office.

**Course Prerequisites and Co-requisites:**

**Prerequisites:** General admission to the college. Students must interview with the program head in order to determine interest, motivation, and aptitudes in dental lab technology.

**Course Objectives:**

Upon completing the course, the student will be able to:

- a. Define terminology and nomenclature as it relates to dental ceramics;
- b. Demonstrate fabrication procedures for various types of ceramic restorations;
- c. Demonstrate the use and designs of porcelain-fused-to-metal restorations; and
- d. Demonstrate procedures for CAD/CAM all ceramic restorations.

**Major Topics to Be Included:**

- a. Fundamentals of substructure design and investing and casting ceramic alloys
- b. Metal preparation for porcelain application
- c. Opaque application and the nature of the porcelain bond
- d. Porcelain build-up technique and composition
- e. Staining, characterizing, and glazing techniques
- f. Pre- and post-soldering procedures
- g. Resin bonded bridges
- h. CAD/CAM design for all ceramic crowns

**Effective Date of Course Content Summary:** August 22, 2008