

APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

1. Submitted by College of Lexington Community College Date 1/5/04

Department/Division offering course Dental Laboratory Technology Program / NSHT

2. Changes proposed:

(a) Present prefix and number DN 111 Proposed prefix and number no change

(b) Present Title Dental Materials I

New Title no change

(c) If course title is changed and exceeds 24 characters (including spaces), include a sensible title (not to exceed 24 characters) for use on transcripts:

NA

(d) Present credits: 2 Proposed credits: no change

(e) Current lecture:laboratory ratio NA Proposed: no change

(f) Effective Date of Change: (Semester & Year) Fall 2004

3. To be Cross-listed as NA  
(Prefix and Number) (Signature: Dept. Chair)

4. Proposed change in Bulletin description:

(a) Present description (including prerequisite(s)):

The major content of this course includes an introduction to the study of dental materials including basic concepts in chemistry. Emphasis is placed on the chemical, physical and thermal properties of gypsum, resin, and abrasives used in dentistry. Basic manipulation of these materials is included in order to prepare the student for future use in the dental laboratory. Lecture, two hours. Prerequisite(s): Admission into the DLT Program or consent of instructor.

(b) New description:

The major content of this course includes an introduction to the study of dental materials including basic concepts in chemistry. Emphasis is placed on the chemical and physical properties of gypsum, resin, and wax used in dentistry. Basic manipulation of these materials is included in order to prepare the student for future use in the dental laboratory. Lecture, two hours.

(c) Prerequisite(s) for course as changed: Admission into the DLT Program or consent of instructor.

5. What has prompted this proposal?

This change is necessary because dental wax content was moved from DN 112 and the content on abrasives is included in the other courses within the curriculum.

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6. If there are to be significant changes in the content or teaching objectives of this course, indicate changes:

**CURRENT COURSE COMPETENCIES:**

Upon satisfactory completion of the course the student will be able to:

1. Describe the historical perspective in the development and classification of dental materials.
2. Describe basic atomic theory and atomic bonding.
3. Describe the terminology involved in the study of the chemical, mechanical, physical, and thermal properties of materials.
4. Describe the molecular structure of materials.
5. Compare the uses of the major gypsum products.
6. Compare the chemical and physical properties of the major gypsum products.
7. Describe the basics of polymer science and compare the physical and thermal properties of resin used in the dental laboratory.
8. Describe the manipulation variables of dental resins and gypsum products.
9. Identify and compare the physical properties of the abrasives used in the dental laboratory.

**PROPOSED COURSE COMPETENCIES:**

Upon satisfactory completion of the course the student will be able to:

1. Describe the historical perspective in the development and classification of dental materials.
2. Describe basic atomic theory and atomic bonding.
3. Describe the molecular structure of dental materials.
4. Describe the terminology involved in the study of the chemical, physical, and mechanical properties of dental materials.
5. Compare the uses and the physical properties of the major gypsum products.
6. Describe the basics of polymer science and compare the physical and thermal properties of resin used in the dental laboratory.
7. Describe the manipulation variables of dental resins, waxes, and gypsum products.
8. Identify and compare the uses and physical properties of dental waxes.

7. What other departments could be affected by the proposed change? None.
8. Will changing this course change the degree requirements in one or more programs?  
 No  Yes (If yes, attach an explanation of the change.)\*
9. Is this course currently included in the University Studies Program?  No  Yes (If yes, please attach correspondence indicating concurrence of the University Studies Committee.)
10. If the course is a 100-200 level course, please submit evidence (e.g. correspondence) that the Community College System has been consulted.

This course is part of a curriculum offered only through Lexington Community College.

11. Is this a minor change?  No  Yes (NOTE: See the description on this form of what constitutes a minor change. Minor changes are sent directly from the Dean of the College to the Chair of the Senate Council. If the latter deems the change not to be minor, it will be sent to the appropriate Council for normal processing.)
12. Within the Department, who should be consulted for further information on the proposed course change?

Name: Robin Gornto, Program Coordinator Phone Extension: 257-4872 ext. 4086

Signatures of Approval:

Department Chair: \_\_\_\_\_

*Gregory A. Zell*

Date: 1-25-04

*President*  
Dean of the College: \_\_\_\_\_

*[Signature]*

Date: 3-11-04

Date of Notice to the Faculty: \_\_\_\_\_

\*\*Undergraduate Council: \_\_\_\_\_

Date: \_\_\_\_\_

\*\*Graduate Council: \_\_\_\_\_

Date: \_\_\_\_\_

\*\*Academic Council for the Med. Center: \_\_\_\_\_

Date: \_\_\_\_\_

\*\*Senate Council: \_\_\_\_\_ Date of Notice to Univ. Senate: \_\_\_\_\_

ACTION OTHER THAN APPROVAL: \_\_\_\_\_

\*NOTE: Approval of this change will constitute approval of the program change unless other program modifications are proposed.

\*\*If applicable, as provided by the Rules of the University Senate.

The Minor Change route for courses is provided as a mechanism to make changes in existing courses and is limited to one or more of the following:

- a. change in number within the same hundred series;
- b. editorial change in description which does not imply change in content or emphasis;
- c. editorial change in title which does not imply change in content or emphasis;
- d. change in prerequisite which does not imply change in content or emphasis;
- e. cross-listing of courses under conditions set forth in item 3.0;
- f. correction of typographical errors. [University Senate Rules, Section III - 3.1]

**APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR**  
**Additional Information on CCS Forms**

**1 Course Outline: (Two-level outline required)**

**CURRENT COURSE OUTLINE:**

- I. The Study of Dental Materials
  - A. History of the development of dental materials
  - B. American Dental Association Specifications
  - C. Council on Scientific Affairs
  
- II Basic Concepts in Chemistry
  - A. Atomic theory
  - B. Atoms, molecules, ions
  - C. Periodic table
  - D. Bonding
  
- III. Compounds and Structures
  - A. Ionic compounds
  - B. Covalent/molecular compounds
  - C. Polycrystalline and amorphous structures
  - D. Polymers and metallic compounds
  
- IV. Physical and Thermal Properties
  - A. Thermal coefficient of expansion and thermal conductivity
  - B. Stress and strain
  - C. Measurements of physical properties
  
- V. Gypsum Products
  - A. Uses
  - B. Chemical composition
  - C. Setting time and setting expansion
  - D. Water/powder ratio
  - E. Hygroscopic expansion
  - F. Storing gypsum products
  
- VI. Resin
  - A. Uses
  - B. Composition
  - C. Requisites of an ideal dental resin
  - D. Polymerization
  - E. Porosity
  - F. Safety measures
  
- VII. Finishing and Polishing Materials
  - A. Uses, types and shapes
  - B. Manipulation

## PROPOSED COURSE OUTLINE:

### The Study of Dental Materials

- A. History of the development of dental materials
- B. American Dental Association Specifications
- C. Council on Scientific Affairs

### II. Basic Concepts in Chemistry

- A. Atomic theory
- B. Atoms, molecules, ions
- C. Periodic table
- D. Bonding

### III. Compounds and Structures

- A. Ionic compounds
- B. Covalent/molecular compounds
- C. Polycrystalline and amorphous structures
- D. Polymers and metallic compounds

### IV. Physical and Mechanical Properties

- A. Thermal coefficient of expansion and thermal conductivity
- B. Stress and strain
- C. Measurements of physical properties

### V. Gypsum Products

- A. Uses
- B. Chemical composition
- C. Setting time and setting expansion
- D. Water/powder ratio
- E. Hygroscopic expansion
- F. Storing gypsum products

### VI. Resin

- A. Uses
- B. Composition
- C. Requisites of an ideal dental resin
- D. Polymerization
- E. Porosity
- F. Safety measures

### VII. Dental Waxes

- A. Uses and manipulation variables
- B. Composition
- C. Physical properties

2. **List of Experiments/Activities: (If laboratory or clinic is involved) -NA-**

3. **Changes in Suggested Learning Resources:**

CURRENT LEARNING RESOURCES:

Textbook: *Phillips' Science of Dental Materials*, by Anusavice, Kenneth J

PROPOSED LEARNING RESOURCES

No Change

4. **Impact of Change on Enrollment: -NA-**

5. **For Inclusion on LCC General Education List: -NA-**

A. Degree Area (AA/AS or AAS or both)

B. Competency Area

C. General Education Competency Statement (List and provide examples of implementation methods/activities)

D. Across the Curriculum Competencies (List and provide examples of implementation methods/activities)

6. **For Removal from General Education List: -NA-**

A. Competency Area

B. Rationale

7. **For Inclusion on University Studies List: (A syllabus must be attached.) -NA-**

A. Area

B. Course Competencies

C. Description of Writing Component

If a course has not been revised during the last five (5) years, the major change route must be used.