

APPLICATION FOR CHANGE IN EXISTING COURSE: MAJOR & MINOR

1. Submitted by College of Lexington Community College Date 1/5/2004

Department/Division offering course Dental Laboratory Technology Program / NSHT

2. Changes proposed:

(a) Present prefix and number DN 112 Proposed prefix and number no change

(b) Present Title Dental Materials II

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) Spring 2005

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)):

This course emphasizes the metallurgy of dental alloys including the mechanism of crystallization, the constitution of alloys, strain hardening and the chemical process of corrosion. The materials associated with fabricating metal prostheses are studied and include impression materials, inlay wax, investments and alloys. Hazard control procedures in the dental laboratory are presented as well as a basic study of applicable physics and unit conversion. Lecture, two hours. Prerequisite(s): DN 111 or consent of instructor

(b) New description:

This course emphasizes the metallurgy of dental alloys including the mechanism of crystallization, strain hardening and the chemical process of corrosion. Materials associated with fabricating dental prostheses are studied and include impression materials, cast alloys and wrought alloys. Hazard and infection control procedures in the dental laboratory are presented as well as a basic study of applicable physics and unit conversion. Lecture, two hours.

(c) Prerequisite(s) for course as changed: DN 111 or consent of instructor

MAR 24 2004

5. What has prompted this proposal?

The infection control information is being moved to this course from DN 142, and the dental wax content is being moved to DN 111. In addition, content on the constitution of alloys is beyond the scope of this course.

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 microstructure and crystallization of metals.
2. Define the thermal and physical properties used in the study of dental alloys.
3. Describe an equilibrium phase diagram for a simple binary dental alloy.
4. Identify the types, causes and chemical changes involved with metal corrosion.
5. Compare the composition and properties of high noble, noble, predominantly base metal, and wrought alloys.
6. Identify the composition, physical and thermal properties of inlay waxes and dental investments.
7. Compare the types of impression materials used in dentistry.
8. Define basic physics concepts related to mechanics and unit conversions.
9. Describe a typical hazard control program for a dental laboratory.

PROPOSED COURSE COMPETENCIES:

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

1. Describe the microstructure and crystallization of metals.
2. Define the thermal and physical properties used in the study of dental alloys.
3. Identify the types, causes and chemical changes involved with metal corrosion.
4. Compare the composition and properties of high noble, noble, predominantly base metal, and wrought alloys.
5. Compare the types of impression materials used in dentistry.
6. Define basic physics concepts related to mechanics and unit conversions.
7. Describe a typical hazard control program for a dental laboratory.
8. Describe the infection control procedures relative to a dental laboratory.

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

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

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

CURRENT COURSE OUTLINE:

- I. Microstructure of Metals
 - A. Solidification of metals
 - B. Constitution of alloys
 - C. Strain hardening and deformation of metals
- II. Casting and Wrought Alloys
 - A. Composition and properties of noble and base metal alloys
 - B. Composition and properties of wrought metal alloys
- III. Corrosion
 - A. Classification of corrosion
 - B. Chemistry of electrochemical cell
- IV. Inlay Wax and Dental Investments
 - A. Composition
 - B. Physical and thermal properties
 - C. Manipulation variables
- V. Impression Materials
 - A. Classifications of impression materials
 - B. Manipulation and setting reactions
 - C. Comparison of impression materials
- VI. Physics
 - A. Mechanics basics
 - B. Unit conversion
- VII. Hazard Control Program
 - A. OSHA standard
 - B. Chemical Inventory, labeling, MSDS
 - C. Training

PROPOSED COURSE OUTLINE:

- Microstructure of Metals
 - A. Solidification of metals
 - B. Strain hardening and deformation of metals
- II. Casting and Wrought Alloys
 - A. Composition and properties of noble and base metal alloys
 - C. Composition and properties of wrought metal alloys
- III. Corrosion
 - A. Classification of corrosion
 - B. Chemistry of an electrochemical cell

- IV. Impression Materials
 - A. Classifications of impression materials
 - B. Manipulation and setting reactions
 - C. Comparison of impression materials

- V. Physics
 - A. Mechanics basics
 - B. Unit conversion

- VI. Hazard Control Program
 - A. OSHA standard
 - B. Chemical Inventory, labeling, MSDS
 - C. Training

- VII. Infection Control
 - A. OSHA bloodborne pathogen standard
 - B. Infectious diseases in dentistry
 - C. Occupational exposures
 - D. Standard precautions
 - E. Disinfection and sterilization

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:

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

Manual: *Infection Control Manual*, 3rd Ed., by Zoll

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.