

# DH R031: NUTRITION IN DENTISTRY FOR DENTAL HYGIENE

**Originator**

aderdiarian

**Co-Contributor(s)****Name(s)**

Newville, Margaret (mnewville)

**College**

Oxnard College

**Discipline (CB01A)**

DH - Dental Hygiene

**Course Number (CB01B)**

R031

**Course Title (CB02)**

Nutrition in Dentistry for Dental Hygiene

**Banner/Short Title**

Nutrition in Dentistry for DH

**Credit Type**

Credit

**Start Term**

Fall 2021

**Catalog Course Description**

This course provides the basic principles of nutrition and its relationship to oral health and well-being. The students perform dietary surveys on clinic patients and plan nutritional dietary problems. Limitations on enrollment: Physical/clinical examination (within the last 12 months) with CBC and urinalysis to verify physical fitness; negative Tuberculosis Mantoux or chest x-ray; Hepatitis B vaccine and titer; Tetanus Vaccine; Titers showing immunity to Rubella, Rubeola, and Varicella; CPR Certification.

**Taxonomy of Programs (TOP) Code (CB03)**

1240.20 - \*Dental Hygienist

**Course Credit Status (CB04)**

D (Credit - Degree Applicable)

**Course Transfer Status (CB05) (select one only)**

C (Not transferable)

**Course Basic Skills Status (CB08)**

N - The Course is Not a Basic Skills Course

**SAM Priority Code (CB09)**

B - Advanced Occupational

**Course Cooperative Work Experience Education Status (CB10)**

N - Is Not Part of a Cooperative Work Experience Education Program

**Course Classification Status (CB11)**

Y - Credit Course

**Educational Assistance Class Instruction (Approved Special Class) (CB13)**

N - The Course is Not an Approved Special Class

**Course Prior to Transfer Level (CB21)**

Y - Not Applicable

**Course Noncredit Category (CB22)**

Y - Credit Course

**Funding Agency Category (CB23)**

Y - Not Applicable (Funding Not Used)

**Course Program Status (CB24)**

1 - Program Applicable

**General Education Status (CB25)**

Y - Not Applicable

**Support Course Status (CB26)**

N - Course is not a support course

**Field trips**

May be required

**Grading method**

Letter Graded

**Does this course require an instructional materials fee?**

No

**Repeatable for Credit**

No

**Is this course part of a family?**

No

**Units and Hours**

**Carnegie Unit Override**

No

**In-Class**

**Lecture**

**Minimum Contact/In-Class Lecture Hours**

17.5

**Maximum Contact/In-Class Lecture Hours**

17.5

**Activity**

**Laboratory**

**Total in-Class**

**Total in-Class**

**Total Minimum Contact/In-Class Hours**

17.5

**Total Maximum Contact/In-Class Hours**

17.5

## Outside-of-Class

### Internship/Cooperative Work Experience

Paid

Unpaid

### Total Outside-of-Class

#### Total Outside-of-Class

##### Minimum Outside-of-Class Hours

35

##### Maximum Outside-of-Class Hours

35

### Total Student Learning

#### Total Student Learning

##### Total Minimum Student Learning Hours

52.5

##### Total Maximum Student Learning Hours

52.5

### Minimum Units (CB07)

1

### Maximum Units (CB06)

1

### Prerequisites

DH R020 and DH R021 and DH R022 and DH R023 and DH R024 and DH R025

### Corequisites

DH R030 and DH R032 and DH R033 and DH R034 and DH R035 and DH R036

### Limitations on Enrollment

Current CPR certification for health care provider (American Heart Association) or professional rescuer (American Red Cross)

Proof of freedom from and immunity to communicable diseases

No acrylic or long nails in clinical settings

Current negative TB test or chest x-ray

Physical examination demonstrating general good health

No visible tattoos or visible body piercings except single studs in earlobes

## Entrance Skills

### Entrance Skills

Students need to fully understand patient treatment planning and patient clinical needs to determine nutritional counseling.

### Prerequisite Course Objectives

DH R024-Manage dental hygiene treatment planning

DH R024-Analyze and describe methods and techniques of plaque control

DH R024-Interpret pertinent patient treatment sequencing and present findings

DH R024-Describe and assess current clinical issues of concern

DH R024-Analyze dental hygiene clinical cases and determine patient and clinician needs appropriate for the case

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### Entrance Skills

Students need to be proficient in giving local anesthesia.

### Prerequisite Course Objectives

DH R020-Explain the armamentarium for local anesthesia injections

DH R020-Demonstrate techniques used in anesthesia injections in dentistry

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**Entrance Skills**

Student needs to understand General and Oral Pathology for Dental Hygiene.

**Prerequisite Course Objectives**

DH R021-Identify and explain the various pathological processes of disease, inflammation, immunology defense, degeneration, neoplasm, developmental disorders, and healing and repairs  
DH R021-Recognize abnormalities in the human body with a special emphasis on normal and abnormal conditions in the oral cavity  
DH R021-Explain the body processes involved in disease formation and the systems the body employs in its defense

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**Entrance Skills**

Student needs to be proficient in Pharmacology.

**Prerequisite Course Objectives**

DH R022-Identify the acts and the regulatory agencies within the federal government that affect the use of medications.  
DH R022-Select and discuss drug information references available to research information.  
DH R022-Identify the format of a prescription and the common abbreviations used.  
DH R022-Describe basic mechanisms of drug action, including receptor-mediated and receptor-independent actions, agonists and antagonists and dose-effect relationships.

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**Entrance Skills**

Student needs to be proficient in their clinical instrumentation skills.

**Prerequisite Course Objectives**

DH R023-Demonstrate various clinical procedures utilizing scaling and polishing techniques  
DH R023-Deliver plaque control instruction  
DH R023-Demonstrate and explain fluoride applications

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**Entrance Skills**

Student needs to be proficient in periodontal knowledge.

**Prerequisite Course Objectives**

DH R025-List, describe and differentiate various periodontal diseases in a classification system as established by the American Academy of Periodontology.  
DH R025-Identify periodontal risk factors that affect onset, progression and severity of periodontal diseases  
DH R025-Identify periodontal risk factors that are acquired, environment and genetic.  
DH R025-Evaluate potential periodontal interrelationships to include: stroke, coronary heart disease, respiratory disease, diabetes, preterm low birth weight deliveries and other conditions associated with progression of periodontal disease.  
DH R025-Explain the interplay between periodontal pathogens and the host tissues.  
DH R025-Describe the stages of development bacterial colonization and composition of human supragingival and subgingival biofilm.

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**Requisite Justification****Requisite Type**

Prerequisite

**Requisite**

DH R020

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Prerequisite

**Requisite**

DH R021

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Prerequisite

**Requisite**

DH R022

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Prerequisite

**Requisite**

DH R023

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Prerequisite

**Requisite**

DH R024

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Prerequisite

**Requisite**

DH R025

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Corequisite

**Requisite**

DH R030

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Corequisite

**Requisite**

DH R032

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Corequisite

**Requisite**

DH R033

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Corequisite

**Requisite**

DH R035

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Requisite Type**

Corequisite

**Requisite**

DH R036

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Content review

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**Student Learning Outcomes (CSLOs)**

**Upon satisfactory completion of the course, students will be able to:**

- |   |                                                                                               |
|---|-----------------------------------------------------------------------------------------------|
| 1 | List the essential amino acids and explain what makes these particular amino acids essential. |
| 2 | Identify the end products of carbohydrate digestion.                                          |
| 3 | Identify the cause of calcification of soft tissues like the heart and liver.                 |

**Course Objectives**

**Upon satisfactory completion of the course, students will be able to:**

- |    |                                                                                                                                                      |
|----|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1  | Compare and contrast factors in the relationship of nutrition and dental health                                                                      |
| 2  | Analyze the digestive mechanisms                                                                                                                     |
| 3  | Evaluate the nutritional status of patients                                                                                                          |
| 4  | Perform nutrition counseling with dental patients                                                                                                    |
| 5  | Evaluate a 3-4 day dietary history of a patient with regard to sugar exposures and nutritional adequacy/quality, and counsel the patient accordingly |
| 6  | Identify disorders relating to inadequate intake or absorption of carbohydrates, essential lipids, protein, vitamins and minerals                    |
| 7  | Compare and contrast factors in the relationship between nutrition and dental health                                                                 |
| 8  | Identify key structural features, functions, major metabolic pathways, and nutritional roles of carbohydrates, lipids, and proteins                  |
| 9  | Identify roles and sources of vitamins and minerals that are essential to oral health and general well-being                                         |
| 10 | List the essential amino acids and explain what makes them "essential"                                                                               |

**Course Content****Lecture/Course Content**

1. Introduction to nutrition in dentistry
2. Nutrition today
  - a. Nutrition as the foundation of general and oral health
  - b. Analyzing a diet
  - c. Energy balance and weight control
  - d. Protein for systemic and oral health
    - i. Protein: The Cellular Foundation
      1. Explain the possible fates of amino acids.
      2. Categorize amino acids as indispensable or dispensable; categorize foods as sources of high-quality or low-quality proteins.
      3. List and describe the seven categories of the physiologic functions of proteins.
      4. Discuss protein requirements for health, and plan individualized menus to meet the recommended protein level for a diet containing animal foods, a vegetarian diet, and a vegan diet containing only plant proteins.
      5. Discuss the following related to underconsumption and overconsumption of protein:
        - List the problems associated with protein deficiency or excess.
        - Appraise a patient's protein consumption to determine protein deficiency or excess.
        - Explain how protein foods can be used to complement one another.
        - Discuss how protein energy malnutrition affects oral health in children.
        - Identify and explain nutrition principles regarding food intake to prevent a patient consuming too much or inadequate amounts of protein.
    - e. Carbohydrates
      - i. Carbohydrate: The Efficient Fuel
        1. Discuss various concepts related to the classification of carbohydrates, including:
          - Identify major carbohydrates in foods and in the body.
          - Differentiate among monosaccharides, disaccharides, and polysaccharides.
          - Describe ways glucose can be used by the body.
          - Summarize the functions of dietary carbohydrates.
          - Explain the importance of dietary carbohydrates.
          - Recognize dietary sources of lactose, other sugars, and starches.
          - Summarize the role and sources of dietary fiber.
        2. Discuss the physiologic role of carbohydrates.
        3. Discuss the acceptable macronutrient distribution range (AMDR) as related to carbohydrates, as well as sources of various types of carbohydrates.

4. Compare and contrast concepts related to hyperstates and hypostates, such as carbohydrate excess, obesity, cardiovascular disease (CVD), carbohydrate deficiency, and dental caries. In addition, formulate recommendations for patients concerning carbohydrate consumption to reduce risk for dental caries.
  - f. Lipids in health and disease
  - g. Minerals and mineralization
    - i. Identify the cause of calcification of soft tissues like the heart and liver.
      1. Discuss the following related to calcium:
        - Describe the physiologic roles of calcium.
        - Discuss the RDA and estimated average requirement for calcium.
        - Discuss the importance of calcium balance in the body, and name common sources of calcium.
        - Individualize dental hygiene considerations to patients regarding calcium.
        - Discuss clinical conditions associated with excesses and deficiencies of calcium, and utilize nutritional directions to provide patient education regarding calcium.
  - h. Vitamins and dietary supplements
    - i. Nutritional implications in chronic health conditions
3. Nutrition and oral conditions
    - a. Nutrition in the growth and development of oral structures
    - b. Diet, nutrition, and teeth
    - c. Nutrition and the periodontium
    - d. Immune-compromising conditions and oral lesions
    - e. Nutrition concerns for the dentally compromised patient
  4. Current issues with nutritional implications
  5. Life cycle nutrition and oral health issues
    - a. Nutrition in pregnancy, infancy, and childhood
    - b. Nutrition and dietary practices for adolescence and adulthood
    - c. The older patient
  6. Principles of diet
  7. Metabolism
  8. Life cycle nutrition
  9. Nutrition and oral conditions
  10. Tools for nutrition applications in clinical dental practice
    - a. Effective communication in dental practice
    - b. Principles of diet screening, assessment, and guidance
    - c. Effects of medications on nutrition, diet, and oral health
    - d. Nutrition resources for the dental practice

#### Laboratory or Activity Content

None

#### Methods of Evaluation

**Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):**

Problem solving exercises  
Written expression

**Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):**

Essays  
Individual projects  
Journals  
Objective exams  
Oral presentations  
Other (specify)  
Problem-Solving Assignments  
Quizzes  
Role playing  
Treatment plans

#### Other

Diet history evaluation-student will evaluate a patient-of-record's 3-day diet history and evaluate deficiencies. They will give appropriate individual recommendations to improve their nutrition.



## Instructional Methodology

### Specify the methods of instruction that may be employed in this course

Computer-aided presentations  
 Class activities  
 Case studies  
 Distance Education  
 Instructor-guided interpretation and analysis  
 Internet research  
 Lecture  
 Role-playing

### Describe specific examples of the methods the instructor will use:

Case studies - Different nutritional logs are given to determine appropriate nutritional dental counseling.  
 Class activities - Collaborative group work constructing mind maps on difficult sections within a chapter.  
 Computer-aided presentations - Individual PowerPoint presentations on assigned case studies.  
 Distance Education - Meetings using video technology and discussion boards.  
 Instructor guided discussion and use of terminology - Use case studies, analysis forms, and dietary analysis forms.  
 Internet research - Using an approved reliable web site to enter foods the patient has eaten from their 3-day diet log. This is a detailed evaluation of nutrition in the patient's diet.  
 Lecture - Notes and PowerPoints.  
 Role-playing - Practice with partners correct dental nutritional counseling.

## Representative Course Assignments

### Writing Assignments

1. Written assignments include weekly summaries of assigned reading and dietary histories and follow-up taken on one patient of record

### Critical Thinking Assignments

Compare and contrast factors in the relationship between nutrition and dental health

### Reading Assignments

1. Students will spend a minimum of 2 hours per week outside of class reading assigned texts and studying professional journals, for example The Journal of the American Dental Association, and related books

## Outside Assignments

### District General Education

A. Natural Sciences

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

### CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

Area F: Ethnic Studies

### CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

#### IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 6: Languages Other than English (LOTE)

## Textbooks and Lab Manuals

### Resource Type

Textbook

### Description

Stegman, Cynthia A., RDH, MEd, RD, LD, CDE and Davis, Judi R. MS, CNSD, RD, LD (2019). *The Dental Hygienist's Guide to Nutritional Care* (5th). Evolve Saunders.

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### Resource Type

Other Resource Type

### Description

Web sites, like that of the American Dental Association and My Fitness Pal, that have pertinent information relating nutrition and dentistry.

## Library Resources

### Assignments requiring library resources

None

### Sufficient Library Resources exist

Yes

## Distance Education Addendum

### Definitions

#### Distance Education Modalities

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

### Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

### Regular Effective/Substantive Contact

#### Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Using video conferencing to communicate with the students about questions on assignments.
Face to Face (by student request; cannot be required)	Office hour availability as needed by student request.
E-mail	Using email to address any changes or clarifications in the schedule and syllabus.

#### Hybrid (51%–99% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Using video conferencing to communicate with the students about questions on assignments.
Face to Face (by student request; cannot be required)	Office hour availability as needed by student request.
E-mail	Using email to address any changes or clarifications in the schedule and syllabus.
Asynchronous Dialog (e.g., discussion board)	Discussion boards for group work on case studies.

#### 100% online Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Video Conferencing	Using video conferencing to communicate with the students about questions on assignments.

E-mail	Using email to address any changes or clarifications in the schedule and syllabus.
Asynchronous Dialog (e.g., discussion board)	Discussion boards for group work on case studies.
Other DE (e.g., recorded lectures)	Prepared lectures with PowerPoint presentations.
Synchronous Dialog (e.g., online chat)	Live lectures with chat availability during the presentation.

## Examinations

### Hybrid (1%–50% online) Modality

Online  
On campus

### Hybrid (51%–99% online) Modality

Online  
On campus

## Primary Minimum Qualification

DENTAL TECHNOLOGY

## Additional local certifications required

Dental Hygiene faculty members must comply with the requirements set by the Commission on Dental Accreditation (CODA). CODA requires that program faculty member providing didactic instruction must have earned at least a baccalaureate degree in a discipline related field. All dental hygiene faculty members must have current knowledge of the specific subjects they are teaching and documented background in educational methodology consistent with their teaching assignments. Dentists and dental hygienists who supervise students' clinical procedures should have qualifications which comply with the state dental or dental hygiene act. Individuals who teach and supervise dental hygiene students in clinical enrichment experiences should have qualifications comparable to faculty who teach in the dental hygiene clinic and are familiar with the program's objectives, content, instructional methods and evaluation procedures.

## Review and Approval Dates

### Department Chair

04/27/2020

### Dean

04/27/2020

### Technical Review

5/13/2020

### Curriculum Committee

5/13/2020

### Curriculum Committee

8/26/2020

### CCCCO

MM/DD/YYYY

### Control Number

CCC000584181

### DOE/accreditation approval date

MM/DD/YYYY