



**DHYG 2110 Biochemistry and Nutrition Fundamentals for the Dental Hygienist  
COURSE SYLLABUS  
Summer Semester 2022**

**COURSE INFORMATION**

Credit Hours/Minutes: 2 Semester Credit Hours and 1500 minutes  
Campus/Class Location: Vidalia/Health Sciences Annex C, Room 906  
Class Meets: Tuesday 1:30-4:30  
Course Reference Number (CRN): 60126

**INSTRUCTOR CONTACT INFORMATION**

Course Director: Melanie Bryson, RDH, BS  
Office Location: Vidalia Campus, Health Sciences Annex C, Office 910  
Office Hours: Monday 8:00-12:00; Tuesday 4:30-5:30; Thursday 11:00-4:00  
Email Address: [Melanie Bryson \(mbryson@southeasterntech.edu\)](mailto:mbryson@southeasterntech.edu)  
Phone: 912-538-3250  
Fax Number: 912-538-3278

**SOUTHEASTERN TECHNICAL COLLEGE'S (STC) CATALOG AND HANDBOOK**

Students are responsible for all policies and procedures and all other information included in Southeastern Technical College's [Catalog and Handbook \(https://catalog.southeasterntech.edu/\)](https://catalog.southeasterntech.edu/).

**REQUIRED TEXT**

The Dental Hygienist's Guide to Nutritional Care. Fifth edition. Stegeman and Davis. 2019. Elsevier.

**REQUIRED SUPPLIES**

Black pen, pencil, paper, 3-ring binder, highlighter, USB jump drive

**Students should not share login credentials with others and should change passwords periodically to maintain security.**

**COURSE DESCRIPTION**

Provides a basic introduction to organic chemistry and biochemistry. Familiarizes students with the role of nutrition in the human body with an emphasis on the dental hygienist's role as a nutritional educator. Topics include: molecular structure, carbohydrates, proteins, nutrition and digestion, bioenergetics, nutritional aspects, nutritional disorders, and diet assessment.

**MAJOR COURSE COMPETENCIES (CC)**

1. Molecular structure
2. Carbohydrates

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3. Proteins
4. Nutrition and Digestion
5. Bioenergetics
6. Nutritional aspects
7. Nutritional disorders
8. Diet Assessment

**PREREQUISITE(S)**

None

**COREQUISITE(S)**

None

**GENERAL EDUCATION CORE COMPETENCIES (GC)**

Southeastern Technical College has identified the following general education core competencies that graduates will attain:

1. The ability to utilize standard written English.
2. The ability to solve practical mathematical problems.
3. The ability to read, analyze, and interpret information.

**STUDENT REQUIREMENTS**

Students are responsible for the policies and procedures in the STC Catalog and Handbook, Dental Hygiene Program Handbook, and Dental Hygiene Clinic Manual. During an examination, the following procedures must be followed: all books and personal belongings must be placed at the back of the classroom. Students will be asked to rotate seats prior to the beginning of the test. Test proctor will personally examine each desk to ensure that no writing is present on desk. Computer monitors should be facing the front of the classroom during test. When a student completes the test, he/she may raise hand and turn paper in to proctor. Student must remain in seat until test time is complete to avoid distracting other students. Students who have completed testing should be as quiet as possible and avoid any activity that might make those students who are still testing feel pressured or rushed. Students may not go to the bathroom during the test session. Test proctor must observe students at all times and notify students when there are ten remaining minutes left of the total exam time. Test proctor should routinely walk around classroom and observe testing. Test proctor should refrain from grading papers, reading materials, or using computer during the test. Students caught with cheat sheets or cell phones will be considered cheating and a zero will be issued for the examination. The STC academic dishonesty policy will be enforced. Once the test begins, no talking is allowed. Once the test begins, tardy students may not enter the classroom.

Students are expected to exhibit professional behavior at all times. Each student must show respect and concern for fellow students and for the course instructors/supervising dentists. Insubordination will not be tolerated, and disciplinary measures will be enacted. No cell phones or smart electronic devices are allowed to be turned on in the classroom, clinic, or locker area. If a student is observed in possession of his/her cell phone or smart electronic device during class, a critical incident will be issued. A student cannot use his/her cell phone or smart electronic device during class. There are no exceptions to this rule and do not ask. If you have a personal situation going on, please advise your instructor and give your family the clinic receptionist's phone number for emergency contact. You should not have your cell phone or smart electronic device in the

class! Personal phone calls must be handled after class.

By completing the assignments below prior to class, students will become familiar with course material prior to classroom facilitation. As a result, higher-level learning will be fostered in the classroom.

1. Read the assigned chapter(s) and be prepared to actively participate in class discussions and activities.
2. Learn the key terms at the beginning of the chapter(s).
3. Complete and know the learning outcomes (objectives) at the front of the chapter(s). Maintain the handwritten learning outcomes in your course notebook.
4. Complete the Test Your NQ questions at the front of the chapter(s). Maintain the handwritten questions, answers, and rationales in your course notebook.
5. Complete the Student Readiness questions at the end of the relevant chapter(s) prior to class. Maintain the handwritten answers in your course notebook.
6. Highlight National Board Exam material in relevant chapter(s) prior to class.
7. Complete any assignments or homework given by the course director.
8. Check lesson plan daily for scheduled assignments/due dates.
9. Obtain materials from the course Materials Drive: M/Dental Hygiene/DHYG 2110. Prior to class, print any materials available to be used in this class for study.
10. Students are advised to check their e-mails regularly for any additional information that is related to the class or the Dental Hygiene Program.

### **COVID-19 MASK REQUIREMENT**

Regardless of vaccination status, students are highly encouraged to wear masks or face coverings while in a classroom or lab at Southeastern Technical College. Masking may be implemented in some program areas (i.e. Health Sciences and Cosmetology) where students, faculty, and clients are in close proximity and social distancing cannot be maintained. This measure is being implemented to reduce COVID-19 related health risks for everyone engaged in the educational process. Masks or face coverings must be worn over the nose and mouth, in accordance with the Centers for Disease Control and Prevention (CDC).

Please note: Because social distancing is not feasible in the clinical area, radiology, or laboratory, a KN-95 or N-95 mask must be worn at all times to protect students, patients, and instructors.

### **COVID-19 SIGNS AND SYMPTOMS**

We encourage individuals to monitor for the signs and symptoms of COVID-19 prior to coming on campus.

If you have experienced the symptoms listed below or have a body temperature 100.4°F or higher, we encourage you to self-quarantine at home and contact a primary care physician's office, local urgent care facility, or health department for further direction. Please notify your instructor(s) by email and do not come on campus for any reason.

<b>COVID-19 Key Symptoms</b>
Fever or felt feverish
Chills
Shortness of breath or difficulty breathing (not attributed to any other health condition)
Fatigue

<b>COVID-19 Key Symptoms</b>
Muscle or body aches
Headache
New loss of taste or smell
Sore throat (not attributed to any other health condition)
Congestion or runny nose (not attributed to any other health condition)
Nausea or vomiting
Diarrhea
<b>In the past 14 days, if you:</b>
Have had close contact with or are caring for an individual diagnosed with COVID-19 at home (not in healthcare setting), please do not come on campus and contact your instructor (s).

### **COVID-19 SELF-REPORTING REQUIREMENT**

Students, regardless of vaccination status, who test positive for COVID-19 or who have been exposed to a COVID-19 positive person, are required to self-report using <https://www.southeasterntech.edu/covid-19/>. Report all positive cases of COVID-19 to your instructor and [Stephannie Waters](mailto:swaters@southeasterntech.edu), Exposure Control Coordinator, [swaters@southeasterntech.edu](mailto:swaters@southeasterntech.edu), 912-538-3195.

### **COVID-19 DAILY SCREENING REQUIREMENT**

Prior to arriving on the premises of STC and entering the Health Sciences Annex- Building C, all dental hygiene students must complete a daily COVID-19 screening of symptoms and a temperature check. If symptoms are present, stay at home and notify program director. Upon entry into the building, students will sign the daily screening log. Social distancing must be practiced while on the premises of STC except during instruction of clinical skills and direct patient care.

### **ATTENDANCE GUIDELINES**

Class attendance is a very important aspect of a student's success. Being absent from class prevents students from receiving the full benefit of a course and also interrupts the learning process. Southeastern Technical College considers both tardiness and leaving early as types of absenteeism. Responsibility for class attendance rests with the student. Regular and punctual attendance at all scheduled classes is required for student success. Students will be expected to complete all work required by the instructor as described in the individual course syllabus. Students who stop attending class, but do not formally withdraw, may receive a grade of "F" (Failing 0-59) and face financial aid repercussions in upcoming semesters. Instructors are responsible for determining whether missed work may be made up and the content and dates for makeup work is at the discretion of the instructor. Excused absences will be evaluated on a case-by-case basis by the program director. Examples of excused absences would be a car accident on the way to class/clinic or unexpected hospitalization of the student. Please do not plan a vacation or schedule a routine medical/dental appointment during the designated class/clinical times. Unexcused absences will not be made up and may lead to the student's failure of the course. Program director must be notified of any absences prior to scheduled clinic/class session.

Attendance is counted from the first scheduled class meeting of each semester. To receive credit for a course, a student must attend at least 90% of the scheduled instructional time. Assignments missed due to tardiness

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or absences must be made up at the convenience of the instructor. Any student attending less than the required scheduled instructional time (90%) may be dropped from the course as stated below in the Withdrawal Procedure.

Tardy means arriving after the scheduled time for instruction to begin. Early departure means leaving before the end of the scheduled time. Three (3) tardies or early departures equal one (1) absence for the course.

**For this class, which meets 1 session per week for 9 weeks, the maximum number of sessions a student may miss for attendance purposes is 1 session during the semester.**

### **ADDITIONAL ATTENDANCE GUIDELINES FOR HEALTH SCIENCES**

Requirements for instructional hours within Health Science programs reflect the rules of respective licensure boards and/or accrediting agencies. Therefore, these programs have stringent attendance policies. Each program's attendance policy is published in the program's handbook and/or syllabus which specify the number of allowable absences. All provisions for required makeup work in the classroom or clinical experiences are at the discretion of the instructor.

#### **Specific Absences**

Provisions for Instructional Time missed because of documented absences due to jury duty, military duty, court duty, or required job training will be made at the discretion of the instructor.

### **WITHDRAWAL PROCEDURE**

A student wishing to officially withdraw from a DHYG (Dental Hygiene) course(s) or all courses after the drop/add period and prior to the 65% point of the term in which the student is enrolled (date will be posted on the school calendar) must speak with a Career Counselor in Student Affairs and complete a Student Withdrawal Form. When the student completes the withdrawal form, a grade of "W" (Withdrawn) is assigned for the course(s). The student will receive a grade of "W" for all DHYG courses for the term in which the student is enrolled and the student will be unable to progress in the Dental Hygiene program.

Informing your instructor that you will not return to his/her course does not satisfy the approved withdrawal procedure outlined above.

Important – Student-initiated withdrawals from a course(s) are not allowed after the 65% point of the term. After the 65% point of the term, only instructors can withdraw students from a course(s).

**Withdrawal Due to Attendance or Academic Deficiency After Drop/Add Period and Prior to 65% Point of Term-** Any student who is withdrawn from a DHYG course(s) due to attendance violation or academic deficiency after drop/add period and prior to the 65% point of the term will receive a grade of "W" for the course(s). If a student is withdrawn from a DHYG course(s) due to an attendance violation or academic deficiency after drop/add period and prior to the 65% point of the term, the student will receive a grade of "W" for all DHYG courses for the term in which the student is enrolled and the student will be unable to progress in the Dental Hygiene program.

**Withdrawal Due to Attendance After 65% Point of Term-**A student withdrawn from a DHYG course(s) due to attendance violation after the 65% point of the term will receive a grade of "WP" (Withdrawal Passing-average of 60 or higher) or a grade of "WF" (Withdrawal Failing-average of 59 or lower). The student will receive a grade of zero for all assignments missed beginning with the Last Date of Attendance (LDA) and the date the

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student exceeds the attendance procedure. If a student is withdrawn from a DHYG course(s) due to an attendance violation after the 65% point of the term, the student will receive a grade of "WP" (Withdrawal Passing-average of 60 or higher) or a grade of "WF" (Withdrawal Failing-average of 59 or lower) for all DHYG courses for the term in which the student is enrolled and the student will be unable to progress in the Dental Hygiene program.

**Withdrawal Due to Academic Deficiency After 65% Point of Term** - A student withdrawn from a DHYG course(s) due to academic deficiency after the 65% point of term will receive a grade of "WP" (Withdrawal Passing-average of 60 or higher) or a grade of "WF" (Withdrawal Failing-average of 59 or lower). If a student is withdrawn from a DHYG course (s) due to academic deficiency after the 65% point of term, the student will receive a grade of "WP" (Withdrawal Passing-average of 60 or higher) or a grade of "WF" (Withdrawal Failing-average of 59 or lower) for all DHYG courses for the term in which the student is enrolled and the student will be unable to progress in the Dental Hygiene program.

There is no refund for partial reduction of hours. Withdrawals may affect the students' eligibility for financial aid for the current semester and in the future. Students must also speak with a representative of the Financial Aid Office to determine any financial penalties that may be assessed due to the withdrawal(s). A grade of "W" will count in attempted hour calculations for the purpose of Financial Aid.

## STUDENTS WITH DISABILITIES

Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact the appropriate campus coordinator to request services.

**Swainsboro Campus:** [Daphne Scott \(dscott@southeasterntech.edu\)](mailto:dscott@southeasterntech.edu) 478-289-2274, Building 1, Room 1210

**Vidalia Campus:** [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu) 912-538-3126, Building A, Room 165

## PREGNANCY

Southeastern Technical College does not discriminate on the basis of pregnancy. However, we can offer accommodations to students who are pregnant that need special consideration to successfully complete the course. If you think you will need accommodations due to pregnancy, please make arrangements with the appropriate campus coordinator.

**Swainsboro Campus:** [Daphne Scott \(dscott@southeasterntech.edu\)](mailto:dscott@southeasterntech.edu) 478-289-2274, Building 1, Room 1210

**Vidalia Campus:** [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu) 912-538-3126, Building A, Room 165

It is strongly encouraged that requests for consideration be made **PRIOR** to delivery and early enough in the pregnancy to ensure that all the required documentation is secured before the absence occurs. Requests made after delivery **MAY NOT** be accommodated. The coordinator will contact your instructor to discuss accommodations when all required documentation has been received. The instructor will then discuss a plan with you to make up missed assignments.

## ACADEMIC DISHONESTY POLICY

The Southeastern Technical College Academic Dishonesty Policy states that all forms of academic dishonesty, including but not limited to cheating on tests, plagiarism, collusion, and falsification of information, will call for discipline. The policy can also be found in the Southeastern Technical College Catalog and Handbook.

**PROCEDURE FOR ACADEMIC MISCONDUCT**

The procedure for dealing with academic misconduct and dishonesty is as follows:

**1. First Offense**

Student will be assigned a grade of "0" for the test or assignment. Instructor keeps a record in course/program files and notes as first offense. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus. The Registrar will input the incident into Banner for tracking purposes.

**2. Second Offense**

Student is given a grade of "WF" (Withdrawn Failing) for the course in which offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of second offense. The Registrar will input the incident into Banner for tracking purposes.

**3. Third Offense**

Student is given a grade of "WF" for the course in which the offense occurs. The instructor will notify the student's program advisor, academic dean, and the Registrar at the student's home campus indicating a "WF" has been issued as a result of third offense. The Vice President for Student Affairs, or designee, will notify the student of suspension from college for a specified period of time. The Registrar will input the incident into Banner for tracking purposes.

**STATEMENT OF NON-DISCRIMINATION**

As set forth in the student catalog, Southeastern Technical College does not discriminate on the basis of race, color, creed, national or ethnic origin, sex, religion, disability, age, political affiliation or belief, genetic information, veteran status, or citizenship status (except in those special circumstances permitted or mandated by law).

The following individuals have been designated to handle inquiries regarding the nondiscrimination policies:

<p><b>American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer</b></p>	<p><b>Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer</b></p>
<p>Helen Thomas, Special Needs Specialist                  Vidalia Campus                  3001 East 1<sup>st</sup> Street, Vidalia                  Office 165 Phone: 912-538-3126                  Email: <a href="mailto:Helen.Thomas@southeasterntech.edu">Helen Thomas</a>  <a href="mailto:hthomas@southeasterntech.edu">hthomas@southeasterntech.edu</a></p>	<p>Lanie Jonas, Director of Human Resources                  Vidalia Campus                  3001 East 1<sup>st</sup> Street, Vidalia                  Office 138B Phone: 912-538-3230                  Email: <a href="mailto:Lanie.Jonas@southeasterntech.edu">Lanie</a>  <a href="mailto:Jonasmailto:bwilcox@southeasterntech.edu">Jonasmailto:bwilcox@southeasterntech.edu</a>  <a href="mailto:ljonas@southeasterntech.edu">ljonas@southeasterntech.edu</a></p>

**ACCESSIBILITY STATEMENT**

Southeastern Technical College is committed to making course content accessible to individuals to comply with the requirements of Section 508 of the Rehabilitation Act of Americans with Disabilities Act (ADA). If you find a problem that prevents access, please contact the course instructor.

## **GRIEVANCE PROCEDURES**

Grievance procedures can be found in the Catalog and Handbook located on Southeastern Technical College's website.

## **ACCESS TO TECHNOLOGY**

Students can now access Blackboard, Remote Lab Access, Student Email, Library Databases (Galileo), and BannerWeb via the mySTC portal or by clicking the Current Students link on the [Southeastern Technical College \(STC\) Website \(www.southeasterntech.edu\)](http://www.southeasterntech.edu).

## **TECHNICAL COLLEGE SYSTEM OF GEORGIA (TCSG) GUARANTEE/WARRANTY STATEMENT**

*The Technical College System of Georgia guarantees employers that graduates of State Technical Colleges shall possess skills and knowledge as prescribed by State Curriculum Standards. Should any graduate employee within two years of graduation be deemed lacking in said skills, that student shall be retrained in any State Technical College at no charge for instructional costs to either the student or the employer.*

## **INSTRUCTIONAL DELIVERY METHODS**

The following methods may be utilized to facilitate learning: lecture, PowerPoint presentations with handouts, multimedia presentations, group discussions, independent reading assignments, interactive websites, role play, and case studies.

## **EVALUATION PROCEDURES**

### **EXAMS**

Students will be given a total of 3 examinations. Examination 1 includes chapters 1-11. A total of 100 points may be earned on the examination 1. Examination 1 will count for 15% of the final course grade. Examination 2 includes chapters 12-21. A total of 100 points may be earned on the examination 2. Examination 2 will count for 15% of the final course grade. Examination 3 includes all chapters covered in the lesson plan. A total of 100 points may be earned on the examination 3. Examination 3 will count for 30% of the final course grade. There are no makeup exams.

**All exam dates are noted in the course syllabus. No make-up exam will be allowed for the final exam. Failure to take the final exam on the specified date will result in a grade of zero. The final exam will cover all course instructional material.**

## **NUTRITIONAL ASSESSMENT AND COUNSELING PRESENTATION PROJECT**

Each student will complete a nutritional assessment and conduct a nutritional counseling presentation. In your future as a dental health care professional, you will be committed to prevention of oral disease along with the promotion of health and wellness. Health and wellness begins first with you as the dental hygiene student. Instruction for the project as well as all necessary handouts may be obtained on the M: drive under DHYG 2110. The deadline is at the beginning of the class session listed on the lesson plan. Failure to submit the project by the deadline will result in a zero. If you are going to be absent on the date of the deadline, please deliver the project to the instructor prior to the deadline. **NO EXCEPTIONS!!!** Submit all assessment forms, PowerPoint (PPT) presentation and nutritional assessment rubric on the deadline. The nutritional assessment project evaluation contains a grading rubric. Please use this to check your progress during the project and before submission of the project. Students must utilize the nutritional assessment rubric to self-assess their project. This will eliminate the likelihood of any omissions from the project. A total of 100 points may be



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earned on the nutritional assessment project. The nutritional assessment project will count for 20% of the course grade.

### **CLASS PREPARATION ASSESSMENT**

A class preparation assessment will be conducted during designated class sessions as outlined on the lesson plan. Each student shall randomly draw one question. The question will cover some topic or portion of the course material that the student should have read and studied as outlined on the lesson plan. If a student demonstrates prior class preparation/participation by answering the question correctly, a session grade of 100 will be recorded. If a student fails to demonstrate prior class preparation/participation by answering the question incorrectly, a session grade of "0" will be recorded.

### **MAKEUP GUIDELINES (TESTS, QUIZZES, HOMEWORK, PROJECTS, ETC.)**

Students are allowed to make up only one missed exam excluding the final examination. This is only if they have an excused absence approved by the instructor. The makeup exam may be given in a different format than the original exam. A doctor's excuse and/or additional documentation will be requested. Ten points will be deducted from the test for taking the test late. All other missed exams/class preparation assessments will result in a grade of zero. If you enter the classroom late, you will not be allowed to take the exam, and you will be issued a zero for the exam. PLEASE be on time! Projects are due on the date specified on the lesson plan at the start time of the class. Projects will not be accepted late for any reason!

Homework/assignments will be assigned throughout the semester. Failure to complete homework/assignments will result in one point being deducted from the final course grade for each assignment not completed by the deadline specified. No exceptions. Late or incomplete assignments still need to be completed and turned in for instructor review and feedback. If you are going to be absent, you should deliver your homework/assignment to your instructor prior to the deadline to ensure credit.

### **REMEDIATION POLICY**

If a student fails to score a grade of 70 or higher on an exam, the student shall be required to complete remediation of the course material covered on the exam to ensure understanding of the material has been attained. The remediation assignment will address areas of unsatisfactory performance. Remediation will be handled on a case by case basis. The remediation must be completed and turned in to the course instructor prior to the next exam date on new course material as noted in the course syllabus lesson plan.

### **GRADING POLICY**

<b>Evaluation Item</b>	<b>Percentage</b>
Exam 1	15
Exam 2	15
Exam 3	30
Nutritional Assessment Project	20
Class Preparation Assessments (averaged together)	20
Point Deductions for late/incomplete assignments-	
Subtotal	
Final Course Grade	

**CALCULATION OF FINAL COURSE GRADE**

<b>Evaluation Item</b>	<b>Grade</b>	<b>(X) %</b>	<b>Points</b>
Exam 1		.15	
Exam 2		.15	
Exam 3		.30	
Nutritional Assessment Project		.20	
Class Preparation Assessment 1			
Class Preparation Assessment 2			
Class Preparation Assessment 3			
Class Preparation Assessment 4			
Class Preparation Assessment 5			
Class Preparation Assessment 6			
Class Preparation Assessments (1-6 averaged together)		.20	
<b>Point Deductions for late/incomplete assignments-</b>			
<b>Subtotal</b>			
<b>Final Course Grade</b>			

**GRADING SCALE**

<b>Letter Grade</b>	<b>Range</b>
A	90-100
B	80-89
C	70-79
D	60-69
F	0-59

**DENTAL HYGIENE PROGRAM GOALS**

- A. To provide comprehensive preparation of competent individuals in the arts and sciences pertinent to the discipline of dental hygiene.
- B. To provide comprehensive preparation of competent individuals in the clinical and laboratory experiences, which are necessary to develop skills in rendering professional dental hygiene patient care to the public.
- C. To provide an environment that will foster respect for the Dental Hygiene Professional Code of Ethics and Conduct and assure recognition and acceptance of the responsibilities of the profession of dental hygiene.
- D. To prepare the graduates of the basic two-year curriculum in dental hygiene to fulfill the dental hygienist's role in community oral health services.
- E. To teach students to conduct critical reviews of current literature as a means of research and life-long learning.
- F. To teach students to seek life-long learning through continuing education courses on the latest products and developments in dentistry and medicine.

## LEARNING OBJECTIVES

### Chapter 1 Overview of Healthy Eating Habits

1. Discuss why dental hygienists, registered dietitians, and nutritionists need to be competent in assessing and providing basic nutritional education to patients. (A, B, C, D)
2. List and describe the general physiologic functions of the six nutrient classifications of foods. Also, describe factors that influence patients' food habits. (A, B, C, D)
3. Discuss government concerns with nutrition, as well as the purpose and objectives of *Healthy People 2020*. (A, B, C, D)
4. Discuss Dietary Reference Intakes (DRIs). (A, B, C, D)
5. Describe the purpose of the *2015-2020 Dietary Guidelines for Americans* and determine the number of food equivalents needed from each food group and subgroup based on the Healthy U.S.-Style Eating Pattern for various calorie levels. (A, B, C, D)
6. Describe healthy eating patterns, and discuss the importance of vegetables, fruits, dairy, protein foods, and oils. (A, B, C, D)
7. Discuss nutrients to limit, as well as other dietary components such as alcohol and caffeine. (A, B, C, D)
8. Describe how physical activity and physical fitness are important factors for an individual's overall health, and how healthful choices should be supported by all systems. (A, B, C, D)
9. Assess the dietary intake of a patient using the *MyPlate* system. Also, discuss other food guides and how they compare to the *MyPlate* system. (A, B, C, D)
10. Master how to read a nutritional label. (A, B, C, D)

### Chapter 2 Concepts in Biochemistry

1. Explain the role of biochemistry in dental hygiene and nutrition. (A, B, C, D)
2. Discuss the fundamentals of biochemistry, including assigning biomolecules according to functional group.
3. Discuss concepts related to principle biomolecules in nutrition:
  - Compare and contrast the structure, function, and properties of the four major classes of biomolecules (carbohydrates, proteins, nucleic acids, and lipids). (A, B, C, D)
  - Outline the structure, function, and properties of monosaccharides, disaccharides, and polysaccharides. (A, B, C, D)
  - Outline the structure, function, and properties of amino acids and proteins. (A, B, C, D)
  - Compare and contrast the roles of enzymes, coenzymes, and vitamins in nutrition. (A, B, C, D)
  - Outline the structure, function, and property of nucleotides and nucleic acids. (A, B, C, D)
  - Outline the structure, function, and property of fatty acids, triglycerides, and steroids. (A, B, C, D)
4. Summarize metabolism, as well as differentiate catabolism from anabolism. In addition, explain connections between metabolic pathways in carbohydrate, protein, and lipid metabolism. (A, B, C, D)

### Chapter 3 The Alimentary Canal: Digestion and Absorption

1. Discuss the physiology of the gastrointestinal tract, including the two basic types of actions on food. (A, B, C, D)
2. Discuss the following related to the oral cavity:
  - Identify oral factors that influence food intake. (A, B, C, D)
  - Explain to patients why saliva flow is important for oral health and overall well-being. (A, B, C, D)

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- Describe the role that teeth play in digestion. (A, B, C, D)
3. Discuss the following related to the esophagus and gastric digestion:
    - Describe how the esophagus works. (A, B, C, D)
    - Discuss gastric digestion, as well as list the two major enzymes found in gastric juice. (A, B, C, D)
  4. Discuss the following related to the small intestine:
    - Recognize the nutrients requiring digestion and the absorbable products. (A, B, C, D)
    - Explain the process of osmosis. (A, B, C, D)
    - Discuss with patients how digestion and absorption may affect nutritional status and oral health. (A, B, C, D)
  5. Discuss the following related to the large intestine:
    - Describe the function of the large intestine. (A, B, C, D)
    - Discuss the side effects of undigested residue. (A, B, C, D)
    - Define the purpose of microflora. (A, B, C, D)
    - Explain the role of gastrointestinal motility in digestion and absorption. (A, B, C, D)
    - State the purpose of peristalsis. (A, B, C, D)

#### **Chapter 4 Carbohydrate: The Efficient Fuel**

1. Discuss various concepts related to the classification of carbohydrates, including:
  - Identify major carbohydrates in foods and in the body. (A, B, C, D)
  - Differentiate among monosaccharides, disaccharides, and polysaccharides. (A, B, C, D)
  - Describe ways glucose can be used by the body. (A, B, C, D)
  - Summarize the functions of dietary carbohydrates. (A, B, C, D)
  - Explain the importance of dietary carbohydrates. (A, B, C, D)
  - Recognize dietary sources of lactose, other sugars, and starches. (A, B, C, D)
  - Summarize the role and sources of dietary fiber. (A, B, C, D)
2. Discuss the physiologic role of carbohydrates. (A, B, C, D)
3. Discuss the acceptable macronutrient distribution range (AMDR) as related to carbohydrates, as well as sources of various types of carbohydrates. (A, B, C, D)
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. (A, B, C, D)
5. Discuss the use of nonnutritive sweeteners and sugar substitutes. (A, B, C, D)

#### **Chapter 5 Protein: The Cellular Foundation**

1. Explain the possible fates of amino acids. (A, B, C, D)
2. Categorize amino acids as indispensable or dispensable; categorize foods as sources of high-quality or low-quality proteins. (A, B, C, D)
3. List and describe the seven categories of the physiologic functions of proteins. (A, B, C, D)
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. (A, B, C, D)
5. Discuss the following related to underconsumption and overconsumption of protein:
  - List the problems associated with protein deficiency or excess. (A, B, C, D)

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- Appraise a patient's protein consumption to determine protein deficiency or excess. (A, B, C, D)
- Explain how protein foods can be used to complement one another. (A, B, C, D)
- Discuss how protein energy malnutrition affects oral health in children. (A, B, C, D)
- Identify and explain nutrition principles regarding food intake to prevent a patient consuming too much or inadequate amounts of protein. (A, B, C, D)

### **Chapter 6 Lipids: The Condensed Energy**

1. Related to the classification, chemical structure, and characteristics of lipids:
  - Describe how fatty acids affect the properties of fat. (A, B, C, D)
  - Explain the function of fat in the body. (A, B, C, D)
  - Discuss the chemical structure of lipids. (A, B, C, D)
  - Describe the characteristics of lipids. (A, B, C, D)
2. Describe the function of various compound lipids and identify foods that contain each. Also, discuss the function and sources of cholesterol. (A, B, C, D)
3. List and describe the physiologic roles of lipids in the body. (A, B, C, D)
4. Discuss the effects of dietary fats on oral health. (A, B, C, D)
5. Related to dietary requirements of lipids:
  - Calculate the recommendation for a person's consumption of dietary fat. (A, B, C, D)
  - Evaluate a patient's food intake for appropriate amounts of saturated fats. (A, B, C, D)
  - Suggest appropriate foods when dietary modification of fat intake has been recommended to a patient. (A, B, C, D)
  - Compare the types of fatty acids in various fats and oils. (A, B, C, D)
6. Discuss nutritional directions for various patient issues related to the overconsumption and underconsumption of fat. (A, B, C, D)

### **Chapter 7 Use of the Energy Nutrients: Metabolism and Balance**

1. Discuss the roles of the liver and the kidneys in metabolism. In addition, describe carbohydrate metabolism. (A, B, C, D)
2. Discuss protein metabolism. (A, B, C, D)
3. Discuss lipid metabolism, alcohol metabolism, metabolic relationships, and metabolic energy. (A, B, C, D)
4. Identify factors affecting the basal metabolic rate. (A, B, C, D)
5. Calculate energy needs according to a patient's weight and activities. (A, B, C, D)
6. Assess factors affecting energy balance; explain physiologic and psychologic sources of energy. (A, B, C, D)
7. Discuss the following related to inadequate energy intake:
  - Summarize the effects of inadequate energy intake. (A, B, C, D)
  - Explain the principles for and importance of regulating energy balance to a patient. (A, B, C, D)
  - Individualize dental hygiene considerations to patients regarding energy metabolism. (A, B, C, D)
  - Relate nutritional directions to meet patients' needs regarding energy metabolism. (A, B, C, D)

### **Chapter 8 Vitamins Required for Calcified Structures**

1. Discuss the following related to vitamins:
  - Discuss requirements and deficiencies of vitamins. (A, B, C, D)
  - List the fat-soluble vitamins, as well as the water-soluble vitamins. (A, B, C, D)

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- Compare the characteristics of water-soluble vitamins with those of fat-soluble vitamins. (A, B, C, D)
2. Discuss the following related to vitamin A:
    - Identify functions, deficiencies, surpluses, toxicities, and oral symptoms for vitamin A. (A, B, C, D)
    - Select food sources for vitamin A. (A, B, C, D)
    - Individualize dental hygiene considerations for patients regarding vitamin A. (A, B, C, D)
    - Relate nutritional directions to meet patients' needs regarding vitamin A. (A, B, C, D)
  3. Discuss the following related to vitamin D:
    - Identify functions, deficiencies, surpluses, toxicities, and oral symptoms for vitamin D. (A, B, C, D)
    - Select food sources for vitamin D. (A, B, C, D)
    - Individualize dental hygiene considerations for patients regarding vitamin D. (A, B, C, D)
    - Relate nutritional directions to meet patients' needs regarding vitamin D. (A, B, C, D)
  4. Discuss the following related to vitamin E:
    - Identify functions, deficiencies, surpluses, toxicities, and oral symptoms for vitamin E. (A, B, C, D)
    - Select food sources for vitamin E. (A, B, C, D)
    - Individualize dental hygiene considerations for patients regarding vitamin E. (A, B, C, D)
    - Relate nutritional directions to meet patients' needs regarding vitamin E. (A, B, C, D)
  5. Discuss the following related to vitamin K:
    - Identify functions, deficiencies, surpluses, toxicities, and oral symptoms for vitamin K. (A, B, C, D)
    - Select food sources for vitamin K. (A, B, C, D)
    - Individualize dental hygiene considerations for patients regarding vitamin K. (A, B, C, D)
    - Relate nutritional directions to meet patients' needs regarding vitamin K. (A, B, C, D)
  6. Discuss the following related to vitamin C:
    - Identify functions, deficiencies, surpluses, toxicities, and oral symptoms for vitamin C. (A, B, C, D)
    - Select food sources for vitamin C. (A, B, C, D)
    - Individualize dental hygiene considerations for patients regarding vitamin C. (A, B, C, D)
    - Relate nutritional directions to meet patients' needs regarding vitamin C. (A, B, C, D)

## **Chapter 9 Minerals Essential for Calcified Structures**

1. Discuss the following related to bone mineralization and growth, formation of teeth, and the mineral elements of the body:
  - List the minerals found in collagen, bones, and teeth, and describe their main physiologic roles and sources. (A, B, C, D)
  - List the three calcified tissues of which teeth are composed. (A, B, C, D)
  - List and discuss major minerals and trace elements of the body. (A, B, C, D)
2. Discuss the following related to calcium:
  - Describe the physiologic roles of calcium. (A, B, C, D)
  - Discuss the RDA and estimated average requirement for calcium. (A, B, C, D)
  - Discuss the importance of calcium balance in the body, and name common sources of calcium. (A, B, C, D)
  - Individualize dental hygiene considerations to patients regarding calcium. (A, B, C, D)
  - Discuss clinical conditions associated with excesses and deficiencies of calcium and utilize nutritional directions to provide patient education regarding calcium. (A, B, C, D)
3. Discuss the following related to phosphorus:
  - Describe the physiologic roles of phosphorus. (A, B, C, D)

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- Discuss the RDA and Tolerable Upper Intake level for phosphorus. (A, B, C, D)
  - Explain how dietary phosphorus is absorbed, and name common sources of phosphorus. (A, B, C, D)
  - Individualize dental hygiene considerations to patients regarding phosphorus. (A, B, C, D)
  - Discuss clinical conditions associated with excesses and deficiencies of phosphorus and utilize nutritional directions to provide patient education regarding phosphorus. (A, B, C, D)
4. Discuss the following related to magnesium:
- Describe the physiologic roles of magnesium. (A, B, C, D)
  - Discuss the RDA for magnesium. (A, B, C, D)
  - Name common sources of magnesium. (A, B, C, D)
  - Individualize dental hygiene considerations to patients regarding magnesium. (A, B, C, D)
  - Discuss clinical conditions associated with excesses and deficiencies of magnesium and utilize nutritional directions to provide patient education regarding magnesium. (A, B, C, D)
5. Discuss the following related to fluoride:
- Describe the physiologic roles of fluoride. (A, B, C, D)
  - Discuss the average intake of fluoride for both men and women. (A, B, C, D)
  - Name common sources of fluoride. (A, B, C, D)
  - Individualize dental hygiene considerations to patients regarding fluoride. (A, B, C, D)
  - Discuss clinical conditions associated with excesses and deficiencies of fluoride and utilize nutritional directions to provide patient education regarding fluoride. (A, B, C, D)
  - Discuss the role of water fluoridation in the prevention of dental caries. (A, B, C, D)

## **Chapter 10 Nutrients Present in Calcified Structures**

1. Discuss the following related to copper:
- Describe the physiologic roles of copper and how they apply to oral health, state the recommended dietary allowance (RDA) for copper, and list sources of copper. (A, B, C, D)
  - Discuss hyper states and hypo states related to copper and apply dental considerations for when either occurs. (A, B, C, D)
2. Discuss the following related to selenium:
- Describe the physiologic roles of selenium and how they apply to oral health, state the RDA for selenium, and list sources of selenium. (A, B, C, D)
  - Discuss hyper states and hypo states related to selenium and apply dental considerations for when either occurs. (A, B, C, D)
3. Discuss the following related to chromium:
- Describe the physiologic roles of chromium and how they apply to oral health, state the RDA for chromium, and list sources of chromium. (A, B, C, D)
  - Discuss hyper states and hypo states related to chromium and apply dental considerations for when either occurs. (A, B, C, D)
4. Discuss the following related to manganese and molybdenum:
- Describe the physiologic roles of manganese and molybdenum and how they apply to oral health, state the RDA for manganese and molybdenum, and list sources of manganese and molybdenum. (A, B, C, D)
  - Discuss hyper states and hypo states related to manganese and molybdenum and apply dental considerations for when either occurs. (A, B, C, D)
5. List ultratrace elements present in the body. (A, B, C, D)

## Chapter 11 Vitamins Required for Oral Soft Tissues and Salivary Glands

1. Describe the physiology of soft tissues. (A, B, C, D)
2. Discuss the following related to thiamin (vitamin B1):
  - Describe the physiologic roles of thiamin, as well as list the Recommended Dietary Allowance (RDA) and sources of thiamin. (A, B, C, D)
  - Identify dental considerations and nutritional directions for hypo states related to thiamin. (A, B, C, D)
3. Discuss the following related to riboflavin (vitamin B2):
  - Describe the physiologic roles of riboflavin, as well as list the Recommended Dietary Allowance (RDA) and sources of riboflavin. (A, B, C, D)
  - Identify dental considerations and nutritional directions for hypo states related to riboflavin. (A, B, C, D)
4. Discuss the following related to niacin (vitamin B3), pantothenic acid (vitamin B5), and vitamin B6 (Pyridoxine):
  - Describe the physiologic roles of each vitamin, as well as list the Recommended Dietary Allowance (RDA) and sources of each. (A, B, C, D)
  - Identify dental considerations and nutritional directions for hyper and hypo states related to each vitamin. (A, B, C, D)
5. Discuss the following related to folate/folic acid, vitamin B12 (Cobalamin), and biotin (vitamin B7):
  - Describe the physiologic roles of each vitamin, as well as list the Recommended Dietary Allowance (RDA) and sources of each. (A, B, C, D)
  - Explain to a patient who is vegan why vitamin B12 is important. (A, B, C, D)
  - Identify dental considerations and nutritional directions for hyper and hypo states related to each vitamin. (A, B, C, D)
6. Discuss the importance of vitamins C, A, and E in oral soft tissues and salivary glands. (A, B, C, D)

## Chapter 12 Fluids and Minerals Required for Oral Soft Tissues and Salivary Glands

1. In relation to fluids:
  - Describe the physiologic roles of fluid and list the fluid requirements for both men and women. Also, identify factors that may affect those requirements. (A, B, C, D)
  - List and discuss the various sources of fluid. (A, B, C, D)
  - Discuss hyper and hypo states related to fluid imbalances in the body, identify oral signs and symptoms of fluid imbalances, and discuss areas of nutritional concern with patients who have fluid imbalances. (A, B, C, D)
2. Explain how electrolytes affect hydration status. (A, B, C, D)
3. Pertaining to sodium and chloride:
  - Describe the physiologic roles of sodium and chloride and list the sodium and chloride requirements for both men and women. (A, B, C, D)
  - List and discuss the various sources of sodium and chloride and discuss with patients how to decrease dietary sources of sodium. (A, B, C, D)
  - Discuss hyper and hypo states related to sodium and chloride imbalances in the body, identify oral signs and symptoms of sodium imbalances, and discuss areas of nutritional concern with patients who have sodium imbalances. (A, B, C, D)
  - Identify diseases and medications associated with restriction of sodium intake. (A, B, C, D)
4. In relation to potassium:



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- Describe the physiologic roles of potassium and list the potassium requirements for both men and women. (A, B, C, D)
  - List and discuss the various sources of potassium and discuss with patients how to increase dietary sources of potassium. (A, B, C, D)
  - Discuss hyper and hypo states related to potassium imbalances in the body, identify oral signs and symptoms of potassium imbalances, and discuss areas of nutritional concern with patients who have potassium imbalances. (A, B, C, D)
5. Related to iron:
- Describe the physiologic roles of iron and list the iron requirements for both men and women. (A, B, C, D)
  - List and discuss the various sources of iron. (A, B, C, D)
  - Discuss hyper and hypo states related to iron imbalances in the body, identify oral signs and symptoms of iron imbalances, and discuss areas of nutritional concern with patients who have iron imbalances. (A, B, C, D)
6. Related to zinc and iodine:
- Describe the physiologic roles of zinc and iodine and list the zinc and iodine requirements for both men and women. (A, B, C, D)
  - List and discuss the various sources of zinc and iodine and discuss with patients how to increase dietary sources of zinc and iodine. (A, B, C, D)
  - Discuss hyper and hypo states related to zinc and iodine imbalances in the body, identify oral signs and symptoms of zinc and iodine imbalances, and discuss areas of nutritional concern with patients who have zinc and iodine imbalances. (A, B, C, D)

### **Chapter 13 Nutritional Requirements Affecting Oral Health in Women**

1. Discuss the following related to factors affecting fetal development:
  - Explain the importance of prenatal weight and weight gain during pregnancy. (A, B, C, D)
  - Advise prenatal patients who have unusual dietary patterns. (A, B, C, D)
  - Discuss why good oral health is important before and during a pregnancy. (A, B, C, D)
  - List foods pregnant women should avoid to decrease risk of foodborne illness. (A, B, C, D)
2. Discuss factors affecting oral development. (A, B, C, D)
3. Discuss nutritional requirements for pregnancy, including:
  - Name nutrients needed in larger amounts by pregnant women and explain why those increases are needed. (A, B, C, D)
  - Identify nutrients frequently consumed in inadequate amounts by pregnant women and suggest ways to improve their intake. (A, B, C, D)
  - Discuss nutrients commonly supplemented during pregnancy. (A, B, C, D)
4. Discuss nutritional requirements for lactation, including:
  - Name nutrients needed in larger amounts by lactating women and explain why those increases are needed. (A, B, C, D)
  - Identify nutrients frequently consumed in inadequate amounts by lactating women and suggest ways to improve their intake. (A, B, C, D)
  - Discuss nutrients commonly supplemented during lactation. (A, B, C, D)
5. List the nutrients affected by oral contraceptive agents (OCAs), as well as the increased risks associated with use of OCAs. (A, B, C, D)

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6. Describe the many hormonal changes that occur in a woman's body during menopause, as well as nutritional approaches that can be used to reduce menopausal symptoms. (A, B, C, D)

### **Chapter 14 Nutritional Requirements During Growth and Development and Eating Habits Affecting Oral Health**

1. The following are related to the growth and development of infants:
  - Discuss the growth and nutritional requirements of infants. (A, B, C, D)
  - Describe how breast milk and artificial milk affect the oral health of infants. (A, B, C, D)
  - Outline the timetable for introducing complementary foods and list reasons for their introduction. (A, B, C, D)
  - Discuss ways to handle typical feeding problems that occur in infants. (A, B, C, D)
  - Discuss oral health concerns and physiologic changes that alter the nutritional status of infants. (A, B, C, D)
2. Discuss dietary recommendations for children older than 2 years of age as described in the *Dietary Guidelines, Healthy People 2020, and MyPlate*. (A, B, C, D)
3. With regard to growth and development of toddlers and preschool children:
  - Discuss the growth and nutritional requirements of toddlers and preschool children. (A, B, C, D)
  - Describe feeding patterns of toddlers and preschool children and how they relate to oral health. (A, B, C, D)
4. Describe various theories behind the root cause of attention-deficit/hyperactivity disorder (ADHD), as well as oral hygiene implications related to children who have various special needs. (A, B, C, D)
5. Discuss the dental caries and food habits of school-age children. (A, B, C, D)
6. Discuss growth and nutrient requirements of adolescents, as well as influential factors that may affect food choices in an adolescent, and how to give nutritional advice to an adolescent. (A, B, C, D)

### **Chapter 15 Nutritional Requirements for Older Adults and Eating Habits Affecting Oral Health**

1. Identify oral nutritional problems typically observed in older adults. (A, B, C, D)
2. Predict physiologic changes that may alter an older individual's nutritional status. (A, B, C, D)
3. Name socioeconomic and psychological factors influencing food intake of older patients. (A, B, C, D)
4. Explain why nutrient requirements of older patients differ from younger patients. (A, B, C, D)
5. Describe typical eating patterns of older adults, relate Dietary Guidelines and MyPlate to the diet of an older adult, and suggest implementation of dietary changes to provide optimum nutrient intake for older patients. (A, B, C, D)

### **Chapter 16 Food Factors Affecting Health**

1. Discuss health care disparities and how they relate to oral health. (A, B, C, D)
2. Regarding (or with regard to) food patterns:
  - Explain how a patient can obtain adequate nutrients from different cultural food patterns. (A, B, C, D)
  - Identify reasons for food patterns. (A, B, C, D)
  - Respect cultural and religious food patterns while providing nutritional recommendations for patients. (A, B, C, D)
3. Pertaining to food budgets:
  - Explain to a patient how to prepare and store food to retain nutrient value. (A, B, C, D)
  - Inform patients of ways to make economical food purchases. (A, B, C, D)

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- Explain to a patient how food processing, convenience foods, and fast foods affect overall intake. (A, B, C, D)
  - Discuss reasons why food additives are used. (A, B, C, D)
4. Describe food fads, and list reasons why health quackery can be dangerous. Also, identify common themes of health quackery and why they are contrary to evidence-based research. (A, B, C, D)
  5. Provide referrals for nutritional resources and describe the role of dental hygienists in combating nutrition fads and misinformation. (A, B, C, D)

### **Chapter 17 Systemic Diseases Affecting Nutritional Status and Oral Health**

1. Discuss the effects of anorexia, taste and smell disorders, and xerostomia on intake and oral health. Also, critically assess the implications of these chronic diseases, and plan appropriate dental interventions for patients with these disorders. (A, B, C, D)
2. Describe the effects of various types of anemias, as well as neutropenia, on nutritional status and oral health. Also, critically assess the implications of these conditions, and plan appropriate dental interventions for patients with these symptoms. (A, B, C, D)
3. Discuss the effects of various gastrointestinal and cardiovascular conditions on nutritional status and oral health. Also, critically assess the implications of these conditions, and plan appropriate dental interventions for patients who have these issues. (A, B, C, D)
4. Discuss the effects of systemic bone disturbances, as well as metabolic problems, on nutritional status and oral health. Also, critically assess the implications of these conditions, and plan appropriate dental interventions for patients who have these issues. (A, B, C, D)
5. Discuss the effects of neuromuscular problems, as well as neoplasia, on nutritional status and oral health. Also, critically assess the implications of these conditions, and plan appropriate dental interventions for patients who have these issues. (A, B, C, D)
6. Discuss the effects of acquired immunodeficiency, as well as mental health problems, on nutritional status and oral health. Also, critically assess the implications of these conditions. (A, B, C, D)

### **Chapter 18 Nutritional Aspects of Dental Caries: Causes, Prevention, and Treatment**

1. Explain the role each of the following play in the caries process: tooth, saliva, food, and plaque biofilm. (A, B, C, D)
2. Discuss the following related to cariogenic foods, as well as cariostatic and noncariogenic properties of food:
  - List cariogenic food and beverages. (A, B, C, D)
  - List examples of fermentable carbohydrates potentially increasing risk to dental health. (A, B, C, D)
  - Identify foods that stimulate salivary flow. (A, B, C, D)
  - Suggest food and beverage choices and their timing to reduce the cariogenicity of a patient's diet. (A, B, C, D)
  - Describe characteristics of foods having noncariogenic or cariostatic properties. (A, B, C, D)
3. Provide nutrition education to a patient at risk for dental caries. (A, B, C, D)

### **Chapter 19 Nutritional Aspects of Gingivitis and Periodontal Disease**

1. Describe the role that nutrition plays in periodontal health and disease to a patient. (A, B, C, D)
2. List the effects of food consistency and composition in periodontal disease. (A, B, C, D)
3. Describe nutritional factors associated with gingivitis and periodontitis. (A, B, C, D)

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4. Discuss the following related to periodontal surgery and necrotizing periodontal disease:
  - Discuss components of nutritional education for a periodontal patient. (A, B, C, D)
  - List major differences between full liquid, mechanically altered, bland, and regular diets. (A, B, C, D)
  - Discuss nutrient deficiencies and oral health issues related to necrotizing periodontal disease. (A, B, C, D)

### **Chapter 20 Nutritional Aspects of Alterations in the Oral Cavity**

1. Describe the common signs and symptoms of xerostomia. Also, synthesize appropriate dietary and oral hygiene recommendations for a patient with orthodontics, xerostomia, root caries, or dentin hypersensitivity. (A, B, C, D)
2. Discuss normal dentition and identify Dietary Guidelines appropriate for a patient undergoing oral surgery and a patient with a new denture, before and after insertion. (A, B, C, D)
3. Describe the common signs and symptoms of glossitis. Also, synthesize appropriate dietary and oral hygiene recommendations for a patient with a loss of alveolar bone, glossitis, or temporomandibular disorder. (A, B, C, D)

### **Chapter 21 Nutritional Assessment and Education for Dental Patients**

1. Discuss the importance of a thorough health, social, and dental history in relation to assessment of nutritional status. (A, B, C, D)
2. Describe the components needed to assess the nutritional status of a patient. (A, B, C, D)
3. Explain the types of diet histories and determine situations in which each may be used effectively. (A, B, C, D)
4. Discuss the following related to dietary treatment plans and nutrition education sessions:
  - Formulate a dietary treatment plan for a dental problem influenced by nutrition. (A, B, C, D)
  - Identify steps and considerations in implementing a dietary treatment plan. (A, B, C, D)
  - Assimilate the steps of a nutrition education session. (A, B, C, D)
  - Integrate EXPLORE-GUIDE-CHOOSE techniques of motivational interviewing into a clinical setting. (A, B, C, D)
5. Practice several communication skills that the dental professional should employ when educating a patient. (A, B, C, D)

## DHYG 2110 Biochemistry and Nutrition Fundamentals for the Dental Hygienist Summer Semester 2022 Lesson Plan

Date/Week	Chapter/ Lesson	Content	Assignments & Tests Due Dates	Competency Area
May 17 Week 1	Chapters 1, 2	<p><u>First day of class/Introduction to Course – Syllabus, Outline, Rules, Regulations Coverage</u></p> <p><u>Overview of Healthy Eating Habits</u></p> <p><u>Concepts in Biochemistry</u></p> <ul style="list-style-type: none"> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> </ul>	<ul style="list-style-type: none"> <li>• Read Chapters 1, 2</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at the beginning of the chapters</li> <li>• Complete Student Readiness at end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• Complete Chapter 2 Biochemistry Concepts assignment</li> </ul>	CC 1, 4, 6 GC a, c
May 24 Week 2	Chapters 3, 4, 5	<p><u>The Alimentary Canal: Digestion and Absorption</u></p> <p><u>Carbohydrates: The Efficient Fuel</u></p> <p><u>Proteins: The Cellular Foundation</u></p> <ul style="list-style-type: none"> <li>• Class Preparation Assessment #1</li> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> <li>• Discuss Case Study</li> <li>• Sample Ethical Dilemma Presentation</li> <li>• Role Play</li> </ul>	<ul style="list-style-type: none"> <li>• Read Chapters 3, 4, 5</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at the beginning of the chapters</li> <li>• Complete Student Readiness at the end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• Complete Chapter 3 Case Study</li> <li>• Complete Carbohydrates Assignment</li> <li>• <b>Class Preparation Assessment #1</b></li> </ul>	CC 2, 3, 4 GC a, c
May 31 Week 3	Chapters 6, 7, 8	<p><u>Lipids: The Condensed Energy</u></p> <p><u>Use of Energy Nutrients: Metabolism and Balance</u></p> <p><u>Vitamins Required for Calcified</u></p>	<ul style="list-style-type: none"> <li>• Read Chapters 6, 7, 8</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at the beginning of the chapters</li> </ul>	CC 4-8 GC a, c

Date/Week	Chapter/ Lesson	Content	Assignments & Tests Due Dates	Competency Area
		<p style="text-align: center;"><u>Structures</u></p> <ul style="list-style-type: none"> <li>• Class Preparation Assessment #2</li> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> </ul>	<ul style="list-style-type: none"> <li>• Complete Student Readiness at the end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• Read Dental Hygiene Code of Ethics and Dental Hygiene Ethics Handouts</li> <li>• <b>Class Preparation Assessment #2</b></li> </ul>	
June 7 Week 4	Chapters 9, 10, 11	<p style="text-align: center;"><u>Minerals Essential for Calcified Structures</u></p> <p style="text-align: center;"><u>Nutrients Present in Calcified Structures</u></p> <p style="text-align: center;"><u>Vitamins Required for Oral Soft Tissues and Salivary Glands</u></p> <ul style="list-style-type: none"> <li>• Class Preparation Assessment #3</li> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> <li>• Critical Thinking Practice Questions</li> </ul>	<ul style="list-style-type: none"> <li>• Read Chapters 9, 10, 11</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at the beginning of the chapters</li> <li>• Complete Student Readiness at the end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• Complete Chapter 9 Case Study</li> <li>• Complete Critical Thinking Practice Questions</li> <li>• <b>Class Preparation Assessment #3</b></li> </ul>	CC 4-8 GC a, c
June 14 Week 5	Chapters 12, 13, 14	<p style="text-align: center;"><u>Fluids and Minerals Required for Oral Soft Tissues and Salivary Glands</u></p> <p style="text-align: center;"><u>Nutritional Requirements Affecting Oral Health in Women</u></p> <p style="text-align: center;"><u>Nutritional Requirements During Growth and Development and Eating Habits Affecting Oral Health</u></p> <ul style="list-style-type: none"> <li>• Exam 1 (Chapters 1-11)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Exam 1 (Chapters 1-11)</b></li> <li>• Read Chapters 12, 13, 14</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at the beginning of the chapters</li> <li>• Complete Student Readiness at the end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> </ul>	CC 2-8 GC a, c

Date/Week	Chapter/ Lesson	Content	Assignments & Tests Due Dates	Competency Area
		<ul style="list-style-type: none"> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> </ul>		
June 21 Week 6	Chapters 15, 16, 17	<p><u>Nutritional Requirements for Older Adults and Eating Habits Affecting Oral Health</u></p> <p><u>Food Factors Affecting Health</u></p> <p><u>Effects of Systemic Disease on Nutritional Status and Oral Health</u></p> <ul style="list-style-type: none"> <li>• Class Preparation Assessment #4</li> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> <li>• Case Studies Discussion</li> </ul>	<ul style="list-style-type: none"> <li>• Read Chapters 15, 16, 17</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at the beginning of the chapters</li> <li>• Complete Student Readiness at the end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• Complete Chapter 15, 16, and 17 Case Studies</li> <li>• <b>Class Preparation Assessment #4</b></li> </ul>	CC 2-8 GC a, c
June 28 Week 7	Chapter 21	<p><u>Nutritional Assessment and Education for Dental Patients</u></p> <ul style="list-style-type: none"> <li>• Class Preparation Assessment #5</li> <li>• Discussion with PPTS</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> <li>• Role Play</li> <li>• Sample Nutritional Counseling</li> </ul>	<ul style="list-style-type: none"> <li>• Read Chapter 21</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapter</li> <li>• Complete Test Your NQ at the beginning of the chapter</li> <li>• Complete Student Readiness at the end of chapter</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• <b>Class Preparation Assessment #5</b></li> </ul>	CC 2-8 GC a, b, c
July 4-7	Summer Break	Summer Break	Summer Break	
July 12 Week 8	Chapters 18, 19, 20	<p>Nutritional Aspects of Dental Caries: Causes, Prevention, and Treatment</p> <p>Nutritional Aspects of Gingivitis</p>	<ul style="list-style-type: none"> <li>• Read Chapters 18, 19, 20</li> <li>• Complete Student Learning Outcomes (objectives) at the beginning of the chapters</li> <li>• Complete Test Your NQ at</li> </ul>	CC 2-8 GC a, c

Date/Week	Chapter/ Lesson	Content	Assignments & Tests Due Dates	Competency Area
		and Periodontal Disease  Nutritional Aspects of Alterations in Oral Cavity Disease  <ul style="list-style-type: none"> <li>• Class Preparation Assessment #6</li> <li>• Group/Class Activity Worksheets and Discussion of Chapter Objectives</li> </ul>	the beginning of the chapters <ul style="list-style-type: none"> <li>• Complete Student Readiness at the end of chapters</li> <li>• Highlight NBDHE material in relevant chapters of textbook</li> <li>• Complete Teach and Test Chapters 18, 19, 20</li> <li>• <b>Class Preparation Assessment #6</b></li> </ul>	
July 19 Week 9	Chapters 12-21	<ul style="list-style-type: none"> <li>• Exam 2 (Chapters 12-21)</li> <li>• Nutritional Counseling Presentations – assigned times to be announced</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Exam 2 (Chapters 12-21)</b></li> <li>• Complete Chapters 12-21 Assessment</li> <li>• Complete Nutritional Assessment /Prepare for Nutritional Counseling</li> <li>• Nutrition Review: Flashcards and PPT Presentation Review Game</li> </ul>	CC 1-8 GC a, b, c
July 26	Chapters 1-21	Exam 3 (Chapters 1-21) – Comprehensive Final	<b>Exam 3 (Chapters 1-21)</b>	CC 1-8 GC a, b, c

**\*Please note – Lesson plan and syllabus are subject to change at the discretion of the course director.**

### MAJOR COURSE COMPETENCIES (CC)

1. Molecular structure
2. Carbohydrates
3. Proteins
4. Nutrition and Digestion
5. Bioenergetics
6. Nutritional aspects
7. Nutritional disorders
8. Diet Assessment

### GENERAL EDUCATION CORE COMPETENCIES (GC)

- a) The ability to utilize standard written English.
- b) The ability to solve practical mathematical problems.
- c) The ability to read, analyze, and interpret information.