



**DHYG 2110 Biochemistry and Nutrition Fundamentals for the Dental Hygienist
COURSE SYLLABUS
Summer Semester 2018**

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): 60182

INSTRUCTOR CONTACT INFORMATION

Course Director: Melanie Bryson, RDH, BS
Email Address: [Melanie Bryson \(mbryson@southeasterntech.edu\)](mailto:mbryson@southeasterntech.edu)
Campus/Office Location: Vidalia/Health Sciences Annex C, Office 910
Office Hours: Monday 7:30-12:00; Tuesday 4:30-5:30; Wednesday 11:00-4:00
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 \(http://www.southeasterntech.edu/student-affairs/catalog-handbook.php\)](http://www.southeasterntech.edu/student-affairs/catalog-handbook.php).

REQUIRED TEXT

The Dental Hygienist's Guide to Nutritional Care. Fourth edition. Stegeman and Davis. 2015. Elsevier.

REQUIRED SUPPLIES

Pen, pencil, paper, 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

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

PREREQUISITE(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.

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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 the objectives at the front of the chapter(s).
4. Check lesson plan daily for scheduled assignments/due dates.

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 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

Students wishing to officially withdraw from a course(s) or all courses after the drop/add period and prior to the 65% portion of the semester (date will be posted on the school calendar) must speak with a Career Counselor in Student Affairs and complete a Student Withdrawal Form. A grade of “W” (Withdrawn) is assigned when the student completes the withdrawal form from the course.

Students who are dropped from courses due to attendance (see your course syllabus for attendance policy) after drop/add until the 65% point of the semester will receive a “W” for the course. Abandoning a course(s) instead of following official withdrawal procedures may result in a grade of “F” being assigned.

After the 65% portion of the semester, the student will receive a grade for the course. (Please note: A zero will be given for all missed assignments.)

There is no refund for partial reduction of hours. Withdrawals may affect students’ eligibility for financial aid for the current semester and in the future, so a student must speak with a representative of the Financial Aid Office to determine any financial penalties that may be assessed due to the withdrawal. All grades, including grades of ‘W’, will count in attempted hour calculations for the purpose of Financial Aid.

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

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.

SPECIAL NEEDS

Students with disabilities who believe that they may need accommodations in this class based on the impact of a disability are encouraged to contact [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126, to coordinate reasonable accommodations.

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 advise me and make appropriate arrangements with [Helen Thomas \(hthomas@southeasterntech.edu\)](mailto:hthomas@southeasterntech.edu), 912-538-3126.

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

The Technical College System of Georgia and its constituent Technical Colleges do not discriminate on the basis of race, color, creed, national or ethnic origin, sex, religion, disability, age, political affiliation or belief, genetic information, disabled veteran, veteran of the Vietnam Era, spouse of military member or citizenship status (except in those special circumstances permitted or mandated by law). This school is in compliance with Title VI of the Civil Rights Act of 1964, which prohibits discrimination on the basis of race, color, or national origin; with the provisions of Title IX of the Educational Amendments of 1972, which prohibits discrimination on the basis of gender; with the provisions of Section 504 of the Rehabilitation Act of 1973, which prohibits discrimination on the basis of handicap; and with the American with Disabilities Act (ADA).

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

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|--|---|
| American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer | Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer |
| Helen Thomas, Special Needs Specialist Vidalia Campus 3001 East 1 st Street, Vidalia Office 108 Phone: 912-538-3126 Email: Helen Thomas | Lanie Jonas, Director of Human Resources Vidalia Campus 3001 East 1 st Street, Vidalia Office 138B Phone: 912-538-3230 Email: Lanie Jonas |

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|---|---|
| American With Disabilities Act (ADA)/Section 504 - Equity- Title IX (Students) – Office of Civil Rights (OCR) Compliance Officer | Title VI - Title IX (Employees) – Equal Employment Opportunity Commission (EEOC) Officer |
| hthomas@southeasterntech.edu | ljonas@southeasterntech.edu |

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**EXAM 1**

Covers chapters 1-11

EXAM 2

Covers chapters 12-21

EXAM 3

Comprehensive final to include all chapters covered in lesson plan

NUTRITIONAL ASSESSMENT AND COUNSELING PRESENTATION PROJECT

Each student will complete a nutritional assessment on an assigned classmate 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. This health and wellness begins

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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.

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. The student will be allowed to remain in class but shall be required to report to campus on Monday at 3:45 and study the course material until 4:45 to ensure adequate time has been spent studying so that application of the course material may be achieved.

GRADING POLICY

| Evaluation Item | Grade | (X) % | Points |
|---|--------------|--------------|---------------|
| Exam 1 | | 15 | |
| Exam 2 | | 15 | |
| Exam 3 | | 30 | |
| Nutritional Assessment Project | | 20 | |
| Class Preparation Assessment (averaged together) | | 20 | |
| Point Deductions for late/incomplete assignments- | | | |
| Subtotal | | | |
| Final Course Grade | | | |

CALCULATION OF FINAL COURSE GRADE

| Evaluation Item | Grade | (X) % | Points |
|---|--------------|--------------|---------------|
| 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 | |
| Point Deductions for late/incomplete assignments- | | | |

| | | | |
|---------------------------|--|--|--|
| Subtotal | | | |
| Final Course Grade | | | |

GRADING SCALE

| Letter Grade | Range |
|---------------------|--------------|
| 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. Describe the general physiological functions of the six nutrient classifications of foods. (A, B, C, D)
2. Identify factors that influence patients' food habits. (A, B, C, D)
3. Name the food groups on *MyPlate*. (A, B, C, D)
4. Determine the amounts needed from each of the food groups on *MyPlate* for a well-balanced 2000 kilocalorie diet. (A, B, C, D)
5. Identify significant nutrient contributions of each food group and assess their implications for a patient's oral health. (A, B, C, D)
6. Describe the *Dietary Guidelines for Americans* and their purpose. (A, B, C, D)
7. Assess dietary intake of a patient, using the *Dietary Guidelines for Americans* and *MyPlate*. (A, B, C, D)
8. Motivate a patient to improve food choices. (A, B, C, D)

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9. Explain the different purposes of dietary reference intakes (DRIs), *MyPlate*, and reference daily intakes (RDIs). (A, B, C, D)
10. Apply basic nutritional concepts to help patients with nutrition-related problems. (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. Assign biomolecules according to functional group. (A, B, C, D)
3. 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)
4. Outline the structure, function, and property of monosaccharides, disaccharides, and polysaccharides. (A, B, C, D)
5. Outline the structure, function, and property of amino acids and proteins. (A, B, C, D)
6. Compare and contrast the roles of enzymes, coenzymes, and vitamins in nutrition. (A, B, C, D)
7. Outline the structure, function, and property of nucleotides and nucleic acids. (A, B, C, D)
8. Outline the structure, function, and property of fatty acids, triglycerides, and steroids. (A, B, C, D)
9. Differentiate catabolism from anabolism. 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 factors that influence food intake. (A, B, C, D)
2. Describe general functions of each digestive organ. (A, B, C, D)
3. Identify chemical secretions necessary for digestion of energy-containing nutrients and in what parts of the gastrointestinal tract they are secreted. (A, B, C, D)
4. Point out the nutrients that require digestion and the digested products that can be absorbed. (A, B, C, D)
5. Explain the role of gastrointestinal motility in digestion and absorption. (A, B, C, D)
6. Choose points in Nutritional Directions for educating dental patients. (A, B, C, D)
7. Describe how digestion and absorption may affect nutritional status and oral health. (A, B, C, D)

Chapter 4 Carbohydrate: The Efficient Fuel

1. Identify major carbohydrates in foods and in the body. (A, B, C, D)
2. Outline ways glucose can be used by the body. (A, B, C, D)
3. Summarize the functions of dietary carbohydrates. (A, B, C, D)
4. Explain the importance of dietary carbohydrates. (A, B, C, D)
5. Identify dietary sources of lactose, other sugars, and starches. (A, B, C, D)
6. Summarize the role and sources of dietary fiber. (A, B, C, D)
7. Describe the role of carbohydrates in the caries process. (A, B, C, D)
8. Formulate recommendations for patients concerning carbohydrate consumption to reduce risk for dental caries. (A, B, C, D)

Chapter 5 Protein: The Cellular Foundation

1. List the possible fates of amino acids. (A, B, C, D)
2. Classify foods as sources of high-quality or lower-quality proteins. (A, B, C, D)
3. Explain how protein foods can be used to complement one another. (A, B, C, D)
4. 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. Explain why various physiological states require different amounts of protein. (A, B, C, D)

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6. Categorize the problems associated with protein deficiency or excess. (A, B, C, D)
7. Assess a patient's protein consumption in terms of deficiency or excess. (A, B, C, D)
8. Apply nutrition principles regarding food intake to prevent protein deficiency and protein excess into patient education. (A, B, C, D)

Chapter 6 Lipids: The Condensed Energy

1. Describe how fatty acids affect the properties of fat. (A, B, C, D)
2. Explain the functions of fats in the body and how these affect oral health. (A, B, C, D)
3. Identify dietary sources for saturated, monounsaturated, polyunsaturated, omega-3 and trans fatty acids, and cholesterol. (A, B, C, D)
4. Calculate the recommended amount of dietary fat. (A, B, C, D)
5. Plan appropriate interventions when dietary modification of fat intake has been recommended to a patient. (A, B, C, D)
6. Select nutritional directions for various patient issues. (A, B, C, D)

Chapter 7 Use of the Energy Nutrients: Metabolism and Balance

1. Calculate energy needs according to the patient's weight and activities. (A, B, C, D)
2. Explain physiological sources of energy. (A, B, C, D)
3. Identify factors affecting the basal metabolic rate. (A, B, C, D)
4. Assess factors affecting energy balance. (A, B, C, D)
5. Summarize the effects of inadequate energy intake. (A, B, C, D)
6. Explain the principles for and importance of regulating energy balance to a patient. (A, B, C, D)
7. Individualize dental hygiene considerations to patients regarding energy metabolism. (A, B, C, D)
8. Relate nutritional directions to meet patients' needs regarding energy metabolism. (A, B, C, D)

Chapter 8 Vitamins Required for Calcified Structures

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

Chapter 9 Minerals Essential for Calcified Structures

1. List the minerals found in collagen, bones, and teeth, and describe their main physiological roles and sources. (A, B, C, D)
2. Describe causes and symptoms of mineral excesses or deficits. (A, B, C, D)
3. Discuss the role of water fluoridation in the prevention of dental caries. (A, B, C, D)
4. Describe advantages and disadvantages of mineral supplementation. (A, B, C, D)
5. Individualize dental hygiene considerations to patients regarding calcium, phosphorus, magnesium, and fluoride. (A, B, C, D)
6. Utilize nutritional directions to provide patient education regarding calcium, phosphorus, magnesium, and fluoride. (A, B, C, D)

Chapter 10 Nutrients Present in Calcified Structures

1. Describe the physiological roles of specific minerals and how these apply to oral health, along with sources of copper, selenium, chromium, and manganese. (A, B, C, D)
2. List ultratrace elements present in the body. (A, B, C, D)
3. Identify reasons why large amounts of one mineral may cause nutritional deficiencies of another. (A, B, C, D)
4. Apply dental hygiene considerations for trace elements present in calcified structures. (A, B, C, D)
5. Discuss nutritional directions for patients regarding the role of trace elements present in calcified structures. (A, B, C, D)

Chapter 11 Vitamins Required for Oral Soft Tissues and Salivary Glands

1. Educate the patient on oral soft tissue changes that occur in a B-complex deficiency. (A, B, C, D)
2. Differentiate between scientifically-based evidence versus food fads concerning vitamins. (A, B, C, D)
3. Explain to a patient, who is a vegan, why vitamin B₁₂ is important and identify appropriate sources. (A, B, C, D)
4. Compare and contrast the functions and sources of vitamins and minerals important for healthy oral soft tissues, as well as deficiencies, toxicities, and associated symptoms. (A, B, C, D)
5. Identify dental considerations for vitamins closely involved in maintaining healthy oral soft tissues. (A, B, C, D)
6. Discuss nutritional directions for vitamins closely involved in maintaining healthy oral soft tissues. (A, B, C, D)
7. Describe the association between beriberi and alcoholism. (A, B, C, D)

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

1. Describe the process of osmosis. (A, B, C, D)
2. Explain how electrolytes affect hydration status. (A, B, C, D)
3. List normal fluid requirements and identify factors that may affect these requirements. (A, B, C, D)
4. Discuss the roles, imbalances, and sources of water, sodium, potassium, iron, zinc, and iodine. (A, B, C, D)
5. Discuss with patients how to decrease dietary sources of sodium and increase potassium intake and state why these are important. (A, B, C, D)
6. Identify oral signs and symptoms of fluid and electrolyte imbalances. (A, B, C, D)
7. Discuss areas of nutritional concern with patients who have fluid and electrolyte imbalances. (A, B, C, D)
8. Determine which diseases and medications may require patients to restrict sodium intake. (A, B, C, D)
9. Identify the most prominent oral symptoms or signs of iron, zinc, and iodine deficiency. (A, B, C, D)

Chapter 13 Nutritional Requirements Affecting Oral Health in Women

1. Assess nutrients commonly supplemented during pregnancy and lactation. (A, B, C, D)
2. Use recommended guidelines to assess food intake of pregnant and lactating women for adequate nutrients. (A, B, C, D)
3. Discuss each factor affecting fetal development. (A, B, C, D)
4. Implement nutrition and oral health considerations for patients who are pregnant or breastfeeding. (A, B, C, D)
5. Apply nutritional directions for patients who are pregnant or breastfeeding. (A, B, C, D)

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

1. Describe the procedure for introducing solid foods after the initial stage of feeding by bottle or breast. (A, B, C, D)
2. Discuss ways to handle typical nutritional problems that occur in infants, young children, school-age children, and adolescents. (A, B, C, D)
3. Apply dental aspects related to nutritional needs during infancy, early childhood, elementary school years, and adolescence to patient care. (A, B, C, D)
4. Assess nutrition education needs for patients during infancy, early childhood, elementary school years, and adolescence. (A, B, C, D)
5. Discuss physiological changes that alter the nutritional status of infants and adolescents. (A, B, C, D)

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

1. Discuss ways to handle typical nutritional problems occurring in older adults. (A, B, C, D)
2. Examine dental considerations of nutritional needs that occur in older patients. (A, B, C, D)
3. Identify nutrition education needs for older patients. (A, B, C, D)
4. Discuss physiological changes altering an older individual's nutritional status. (A, B, C, D)
5. Discuss differences in amounts of nutrients needed by older patients compared with younger patients. (A, B, C, D)
6. Describe factors influencing food intake of older patients. (A, B, C, D)
7. Suggest dietary changes that could be implemented to provide optimum nutrient intake for older patients. (A, B, C, D)

Chapter 16 Food Factors Affecting Health

1. Explain how a patient can obtain adequate nutrients from different cultural food patterns. (A, B, C, D)
2. Identify reasons for food patterns. (A, B, C, D)
3. Respect cultural and religious food patterns while providing nutritional recommendations for patients. (A, B, C, D)
4. Explain to a patient how to prepare and store food to retain nutrient value. (A, B, C, D)
5. Provide referrals for nutritional resources. (A, B, C, D)
6. Inform patients of ways to make economical food purchases. (A, B, C, D)
7. Explain to a patient how food processing, convenience foods, and fast foods affect overall intake. (A, B, C, D)
8. Discuss reasons why food additives are used. (A, B, C, D)
9. List reasons why health quackery can be dangerous. (A, B, C, D)
10. Identify common themes of health quackery and why they are contrary to evidence-based research. (A, B, C, D)

Chapter 17 Effects of Systemic Disease on Nutritional Status and Oral Health

1. Discuss the various diseases, conditions, and treatments that commonly have oral signs and symptoms. (A, B, C, D)
2. Discuss disease states, conditions, and accompanying treatments likely to affect nutritional intake. (A, B, C, D)
3. Critically assess the implications of a patient's systemic diseases or conditions for optimal oral health. (A, B, C, D)

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4. Plan appropriate dental interventions for patients with systemic diseases or conditions with oral manifestations based on dietary guidelines. (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. Identify foods that stimulate salivary flow. (A, B, C, D)
3. Suggest food and beverage choices and their timing to reduce the cariogenicity of a patient's diet. (A, B, C, D)
4. Describe characteristics of foods having noncariogenic or cariostatic properties. (A, B, C, D)
5. 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 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)
4. Discuss components of nutritional education for a periodontal patient. (A, B, C, D)
5. List major differences between full liquid, mechanically altered, bland, and regular diets. (A, B, C, D)

Chapter 20 Nutritional Aspects of Alterations in the Oral Cavity

1. Describe the common signs and symptoms of xerostomia and glossitis. (A, B, C, D)
2. Synthesize appropriate dietary and oral hygiene recommendations for a patient with orthodontics, xerostomia, root caries, dentin hypersensitivity, glossitis, temporomandibular disorder, or removable prosthetic appliances. (A, B, C, D)
3. 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)

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 nutrition status. (A, B, C, D)
2. Describe the components needed to assess the nutrition status of a patient. (A, B, C, D)
3. Explain the types of diet histories and determine situations in which each is used effectively. (A, B, C, D)
4. Formulate a dietary treatment plan for a dental problem influenced by nutrition. (A, B, C, D)
5. Identify steps and considerations in implementing a dietary treatment plan. (A, B, C, D)
6. Assimilate the steps of a nutrition education session. (A, B, C, D)
7. Practice several communication skills the dental professional should employ when educating a patient. (A, B, C, D)
8. Integrate EXPLORE-GUIDE-CHOOSE techniques of motivational interviewing into a clinical setting. (A, B, C, D)

DHYG 2110 Biochemistry and Nutrition Fundamentals for the Dental Hygienist Summer Semester 2018 Lesson Plan

| Date/Week | Chapter/Lesson | Content | Assignments & Tests Due Dates | Competency Area |
|------------------|------------------|---|---|-----------------------|
| May 15 Week 1 | Chapters 1, 2, 3 | First day of class/Introduction to Course – Syllabus, Outline, Rules, Regulations Coverage, M: drive Overview of Healthy Eating Habits Concepts in Biochemistry The Alimentary Canal | Introduction to course Access to M: drive Discuss resources available from textbook Nutrition Identification Activity Overview of Healthy Eating Habits Discussion/Activity Concepts in Biochemistry PPT (PowerPoint) Presentation Alimentary Canal Discussion/Activity Major Nutrients at a Glance Handout Dental Hygiene Code of Ethics and Dental Hygiene Ethics Assignments- Bring Code of Ethics handout next week Carbohydrates Worksheet Assignment due next week | CC 1, 4, 6 GC a, c |
| May 22 Week 2 | Chapters 4, 5, 6 | Carbohydrates Lipids | Class Preparation Assessment #1 Carbohydrates | CC 2, 3, 4 GC a, c |

| Date/Week | Chapter/Lesson | Content | Assignments & Tests Due Dates | Competency Area |
|------------------|-----------------------|--|---|--------------------|
| | | Proteins | Worksheet due today Carbohydrates Discussion Carbohydrates - Test My Knowledge Group Activity Diabetes Think-Pair- Share Group Activity Proteins PPT Presentation Lipids – Meet the Lipid Family Discussion/Worksheet Behavior Contract Group Ethics Activity | |
| May 29 Week 3 | Chapters 7, 8 | Use of Energy Nutrients Vitamins required for Calcified Structures | Class Preparation Assessment #2 Use of Energy Nutrients – Outline of Metabolism Worksheet Vitamins – Worksheet Vitamin Test | CC 4-8 GC a, c |
| Jun 5 Week 4 | Chapters 9, 10, 11 | Minerals Essential for Calcified Structures Nutrients Present in Calcified Structures Vitamins Required for Oral Soft Tissues and Salivary Glands | Class Preparation Assessment #3 Essential Minerals and Nutrients – Worksheet Vitamins – Worksheet Continued | CC 4-8 GC a, c |

| Date/Week | Chapter/Lesson | Content | Assignments & Tests Due Dates | Competency Area |
|------------------|---------------------|--|---|--------------------|
| | | | Chapter 1-11 Critical Thinking Practice Questions – Group Activity | |
| Jun 12 Week 5 | Chapters 12, 13, 14 | <p>Fluids and Minerals Required for Oral Soft Tissues and Salivary Glands</p> <p>Nutritional Requirements Affecting Oral Health in Women</p> <p>Nutritional Requirements During Growth and Development and Eating Habits Affecting Oral Health</p> | <p>Exam 1 – Chapters 1-11</p> <p>Essential Minerals and Nutrients – Worksheet Continued</p> <p>Water PPT Presentation</p> <p>Water Test</p> <p>Nutritional Requirements for Women and Children – Dental Considerations and Nutritional Directions</p> <p>Due Next Week – Case Study – Chapters 15, 16, 17</p> | CC 2-8 GC a, c |
| Jun 19 Week 6 | Chapters 15, 16, 17 | <p>Nutritional Requirements for Older Adults and Eating Habits Affecting Oral Health</p> <p>Food Factors Affecting Health</p> <p>Effects of Systemic Disease on Nutritional Status and Oral Health</p> | <p>Class Preparation Assessment #4</p> <p>Case Study – Chapters 15, 16, 17 due today</p> <p>Older Adults – Nutritional Requirements and Eating Habits – USDA (United States Department of Agriculture)</p> <p>Food Factors – Dental Considerations</p> | CC 2-8 GC a, c |

| Date/Week | Chapter/Lesson | Content | Assignments & Tests Due Dates | Competency Area |
|-------------------|---------------------|---|--|----------------------|
| | | | Effects of Systemic Disease on Nutritional Status and Oral Health PPT Presentation | |
| Jun 26 Week 7 | Chapter 21 | Nutritional Assessment and Education for Dental Patients | Class Preparation Assessment #5 Sample Nutritional Assessment Finding PAP (Potential Acid Production) Food Diary Options Reliable Websites Sugar Surprise Assign Partners for Nutritional Assessment Project Assign Students for Teach & Test | CC 2-8 GC a, b, c |
| July 10 Week 8 | Chapters 18, 19, 20 | Nutritional Aspects of Dental Caries: Causes, Prevention, and Treatment Nutritional Aspects of Gingivitis and Periodontal Disease Nutritional Aspects of Alterations in Oral Cavity Disease | Class Preparation Assessment #6 Students will present the Teach & Test Assignment for Chapters 18, 19, 20 Chapters 12-21 Assessment due next week | CC 2-8 GC a, c |
| July 17 Week 9 | Chapters 12-21 | Exam 2 Nutritional Assessment Counseling Presentation Nutrition Review | Exam 2 – Chapters 12-21 Chapters 12-21 Assessment Due Today (turn in before taking Exam 2) | CC 1-8 GC a, b, c |

| Date/Week | Chapter/Lesson | Content | Assignments & Tests Due Dates | Competency Area |
|-----------|----------------|---|---|----------------------|
| | | | Students will perform the Nutritional Assessment Counseling Presentations in the Dental Hygiene Clinic Nutrition Review: Flashcards and PPT Presentation Review Game | |
| July 24 | Chapters 1-21 | Exam 3 – Comprehensive Final – includes all chapters covered in the lesson plan | Exam 3 – Chapters 1-21 | 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.