

# GENERAL AND DENTAL NUTRITION

Lamar Institute of  
Technology

DHYG 1207

Course Syllabus

Spring

Taught by:  
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## LECTURE SCHEDULE

January		
Week 1	Introduction to course <i>Overview of Healthy Eating Habits</i> Intro to <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a>	Chapter 1
Week 2	<i>Concepts in Biochemistry</i> <i>The Alimentary Canal</i> <i>Carbohydrate: The Efficient Fuel</i>	Chapter 2 Chapter 3 Chapter 4
Week 3	<i>Continued – Carbohydrates</i> <i>Nutritional Aspects of Dental Caries</i>	Chapter 4 Chapter 18
February		
Week 1	<b>EXAM 1</b> <i>Protein: The Cellular Foundation</i>	<b>Chapters 1,2,3,4,18</b> Chapter 5
Week 2	<i>Lipids: The Condensed Energy</i> <i>Use of the Energy Nutrients: Metabolism and Balance</i>	Chapter 6 Chapter 7
Week 3	<i>Vitamins Required for Calcified Structures: A, D, E, K</i>	Chapter 8
March		
Week 1	<b>EXAM 2</b> <i>Minerals Essential for Calcified Structures</i> <i>Nutrients Present in Calcified Structures</i>	<b>Chapters 5,6,7,8</b> Chapter 9 Chapter 10
<b>Week 2</b>	<b>NO CLASS – SPRING BREAK</b>	
Week 3	<i>Vitamins Required for Oral Soft Tissues and Salivary Glands</i> <i>Water and Minerals Required for Oral Soft Tissues and Salivary Glands</i>	Chapter 11 Chapter 12 <b>DUE: Personal Food Diary Assessment</b>
April		
<b>Week 1</b>	<b>NO CLASS – GOOD FRIDAY</b>	
Week 2	<i>Nutritional Requirements Affecting Oral Health in Women</i> <i>Culture affects our Diet - Video - Portion Size Me</i>	Chapter 13 Video
Week 3	<b>EXAM 3</b> <i>Nutritional Requirements During Growth &amp; Development</i>	<b>Chapters 9,10,11,12 &amp; 13</b> Chapter 14
Week 4	<i>Nutritional Requirements for Older Adults</i> <i>Other Considerations Affecting Nutrient Intake</i> <i>Effects of Systemic Disease on Nutritional Status</i>	Chapter 15 Chapter 16 (assigned) Chapter 17
May		
Week 1	<i>Continued- Effects of Systemic Disease on Nutritional Status</i> <i>Nutritional Aspects of Gingivitis and Periodontal Disease</i> <i>Nutritional Aspects of Alterations in the Oral Cavity</i>	Chapter 17 Chapters 19 & 20
Week 2	<i>Nutritional Assessment and Counseling for Dental Hygiene Patients</i>	Chapter 21 Video of Counseling
<b>TBA</b>	<b>EXAM 4</b>	<b>Chapters 14,15,17,19, 20,21</b>

## COURSE DESCRIPTION

A study of general nutrition and nutritional biochemistry emphasizing the effect nutrition has on oral health.

## PREREQUISITE

DHYG 1301, 1431, 1304, & 1227.

## COURSE GOALS

The student will;

1. Demonstrate knowledge of basic concepts in nutritional biochemistry.
2. Understand the concept of RDA's, nutrient density, choosemyplate.gov, and food labeling.
3. Demonstrate competency in utilizing a table of the nutrient value of common foods.
4. Identify and explain the six classes of nutrients.
5. Demonstrate the digestion, transport and absorption of nutrients in the human.
6. Recognize the nutritional variations during the life cycle and state their importance in the prevention of disease.
7. Apply dental nutrition concepts through the preparation and presentation of a nutrition counseling session for the management of diet related dental problems.

**CREDIT HOURS:** 2 semester hours

**CLASSROOM:** 112 MPC

**CLASS MEETING TIME:** 9:00 – 11:00 am Friday

## INSTRUCTOR

Deborah Brown, RDH, MS, Associate Professor  
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**Students should discuss questions by appointment or as the instructor is available**

## COURSE POLICIES

### 1. Attendance Policy

#### Absenteeism

In order to ensure the students in the dental hygiene program achieve the necessary didactic and clinical competencies outlined in the curriculum, it is necessary that the student complete all assigned lecture classes, clinical and laboratory hours. It is the responsibility of the student to attend class, clinic or lab. The instructor expects each student to be present at each session.

It is expected that students will appear to take their exams at the regularly scheduled examination time. Make-up examinations will be given **only** if the absence is due to illness (confirmed by a physicians' excuse), a death in the immediate family, or at the discretion of the instructor.

If students are unable to attend lecture class, clinic or lab, it is **mandatory that you call the appropriate instructor prior to the scheduled class, clinic or lab time**. The student is responsible for all material missed at the time of absence. Extenuating circumstances will be taken into account. Extenuating circumstances might include but are not limited to: funeral of immediate family member, maternity, hospitalization, etc. If the student has surgery, a debilitating injury, or an extended illness, a doctor's release will be required before returning to clinic.

**a. Fall/Spring Semesters:**

Dental hygiene students will be allowed **two excused absences** in any lecture, clinic or lab. Absences must be accompanied by a written excuse on the next class day. In the event that a student misses class, clinic or lab beyond the allowed absences, the following policy will be enforced:

2 absences = verbal warning

Beginning with the 3 absence, **2 points** will be deducted from the final course grade for each absence thereafter.

**Tardiness**

Tardiness is disruptive to the instructor and the students in the classroom. It is expected that students will arrive on time for class, clinic or lab, and remain until dismissed by the instructor. If tardiness becomes an issue, the following policy will be enforced:

Tardy 1 time = verbal warning

Tardy 2 times is considered an absence.

**Students should plan on attending classes, labs and clinic sessions as assigned throughout the semester. Family outings, vacations and personal business should be scheduled when school is not in session and will not be considered excuses for missing assignments, examinations, classes, labs or clinic time.**

**2. Disabilities Statement.** The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities.

If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building. You may also visit the online resource at <http://www.lit.edu/depts/stuserv/special/defaults.aspx>.

**3. Student Code of Conduct Statement**

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at [www.lit.edu](http://www.lit.edu) or obtained in print upon request at the Student Services Office. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

**4. Technical Requirements (for Blackboard)**

The latest technical requirements, including hardware, compatible browsers, operating systems, software, Java, etc. can be found online at: [https://help.blackboard.com/en-us/Learn/9.1\\_2014\\_04/Student/015\\_Browser\\_Support/015\\_Browser\\_Support\\_Policy](https://help.blackboard.com/en-us/Learn/9.1_2014_04/Student/015_Browser_Support/015_Browser_Support_Policy). A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of the online technology and resources.

**5. Examination Policy.** Students are expected to complete examinations as scheduled. Make-up examinations will be given only if the absence is due to illness (confirmed by a physician's excuse), a death in the immediate family or at the discretion of the instructor. All make-up examinations must be taken within one week following the original exam date. All examinations must be returned to the instructor to be kept on file. Students may have access to the examinations by appointment during the instructor's office hours. Exams may be reviewed up to one week following the exam date.

**6. Late Work.** Assignments will not be accepted if turned in late.

Please refer to the student handbook for a comprehensive listing of the program policies.

Faculty has the authority to modify the above policies if unusual circumstances mandate a change.

**7. Electronic equipment/cell phones.** Cell phones should be turned off during class time. No texting from cell phones or computers will be allowed during the posted hours for class.

**8. Leaving Class during Lecture** You should be prepared to remain in class for the entire class period. Any

personal business should be taken care of prior to or after class. If a medical problem exists or an emergency occurs please inform the instructor.

## TEACHING METHODS

Lecture, class discussion, audiovisual, personal dietary assessment, reading assignments.

## REQUIRED TEXTS

**Davis, J. & Stegeman, C. (Latest edition) The Dental Hygienist's Guide to Nutritional Care, 4<sup>th</sup> edition, Elsevier Saunders: St. Louis, Missouri. ISBN: 978-1-4557-3765-9**

## REFERENCE MATERIALS

Nix, S. (2005) Williams' Basic Nutrition & Diet Therapy, 12<sup>th</sup> edition, Elsevier Mosby: St. Louis, Missouri.

Palmer, G.A. (2007) Diet and Nutrition in Oral Health, 2<sup>nd</sup> edition, Prentice Hall: Upper Saddle River.

<http://www.choosemyplate.gov/>

Smith, A.M. & Wardlaw, G.M. (2011) Contemporary Nutrition, 8<sup>th</sup> edition, McGraw-Hill: New York, NY.

Sroda, R. (2010) Nutrition for a Healthy Mouth, 2<sup>nd</sup> edition, Lippincott Williams & Wilkins: Baltimore & Philadelphia.

## INSTRUCTIONAL AIDS

Nutrition, Diet and Dental Health: Methods. ADHA self-study course on nutrition and relationship to caries and periodontal disease.

## COURSE REQUIREMENTS

1. Requirements for this course include four tests, one Personal Food Diary Project, and class participation grade. The student must pass the course with a 75% or higher in order to receive credit for DHYG 1207.
2. **Personal Food Diary Project.** The purpose of the counseling project is to afford the dental hygiene student the opportunity to apply the learned nutritional principles on themselves before applying them to a patient. Complete instructions may be found on page 24-26.
  - A. **Documentation.** Each student must complete all clinical forms (pg. 27-32).
  - B. **Written Report.** The will provide a written summary using the information from [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov), Dietary Guidelines, nutrient intake and food group report. The student will compare food intake to the nutrients highlighted on the dietary assessment form. For more detail see pages 25-26.
  - C. **Computer Usage.** Students must be familiar with current computer programs utilized in contemporary dental office settings. Therefore, students must utilize the on-line site of [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov) to complete the diet analysis. This site may be accessed on any computer with internet capabilities.

## EVALUATION CRITERIA

Student must earn a grade of "C" or better to progress in the curriculum.

General and Dental Nutrition (DHYG 1207)  
Spring

Exams (4)	75%
Personal Food Diary Project	25%

Grade Scale

A	92 - 100
B	83 - 91
C	75 - 82
D	60 - 74
F	Below 60

## CONTENT OUTLINE

### Overview of Healthy Eating Habits

60 minutes

- a. Nutrients
  - 1. essential nutrients
  - 2. function
  - 3. energy value (Kcalorie)
- b. Energy Needs of the Body
  - 1. basal metabolism
  - 2. basal metabolic rate
  - 3. energy expenditure factors
- c. Food Choice Guidance
- d. Dietary Standards
- e. Food Labeling
  - 1. Daily Reference Values
  - 2. Reference Daily Intakes

### Concepts in Biochemistry

30 minutes

- a. Fundamentals of biochemistry
- b. Principles of biomolecules in nutrition

### The Alimentary Canal: Digestion and Absorption

30 minutes

- a. Functions of each digestive organ
- b. Chemical secretions necessary for digestion of nutrients
- c. Where the chemical secretions are secreted
- d. How digestion and absorption affect nutritional status

### Carbohydrates

100 minutes

- a. Introduction
- b. Chemistry and Classification
  - 1. Monosaccharides
    - a. glucose
    - b. fructose
    - c. galactose
  - 2. Disaccharides
    - a. sucrose
    - b. lactose
    - c. maltose
  - 3. Polysaccharides
    - a. starch
    - b. glycogen
    - c. dietary fiber
      - 1. soluble
      - 2. insoluble
      - 3. Relationship between dietary fiber and health
- c. Physiologic Role
- d. Requirements
- e. Sources
- f. Hyper and Hypo States
  - 1. Carbohydrate excess
  - 2. Carbohydrate deficiency
  - 3. Dental caries
  - 4. Obesity



- g. Sugar Substitutes
  - 1. sugar alcohols
  - 2. flavinoid sweeteners
  - 3. saccharin
  - 4. aspartame
  - 5. acesulfame K
  - 6. cyclamates
  - 7. xyitol
  - 8. stevia plant

**Protein**

**100 minutes**

- a. Structure
- b. Classification
  - 1. Essential
  - 2. Nonessential
  - 3. Conditionally essential
- c. Measures of Protein Quality
  - 1. Complete and incomplete
  - 2. Biologic Value
  - 3. Nitrogen Balance
- d. Physiologic Roles
- e. Requirements
- f. Digestion and Metabolism
- g. Sources
  - 1. Bioavailability
- h. Under-consumption and Health-Related Problems
  - 1. Marasmus
  - 2. Kwashikor
- i. Over-consumption and Health-Related Problems

**Lipids**

**60 minutes**

- a. Overview
- b. Functions
- c. Types and Chemical Structure
  - 1. triglycerides
  - 2. other dietary lipids
    - a. phospholipids
    - b. sterols
    - c. essential fatty acids
    - d. other
- d. Digestion and absorption
- e. Metabolism and storage
- f. Current Patterns of Consumption
- g. Dietary Requirements
- h. Sources
- i. Role in health
  - 1. Obesity
  - 2. Fats and coronary Heart Disease
  - 3. Cancer
  - 4. Hyperlipidemia
- j. Fats and Oral Health
  - 1. Dental caries
  - 2. Parotid enlargement

**Use of Energy Nutrients: Metabolism and Balance**

**30 minutes**

- a. Metabolism
  - 1. Catabolism
  - 2. Anabolism
- b. Krebs Cycle
- c. Carbohydrate Metabolism
- d. Protein Metabolism
- e. Lipid Metabolism
- f. Alcohol Metabolism
- g. Metabolic Interrelationships
- h. Metabolic energy
- i. Basal Metabolic Rate (BMR)
  - 1. Factors affecting BMR
- j. Total Energy Requirements
  - 1. Basal energy expenditure (BEE)
    - a. Factors affecting BEE
- k. Energy Balance
  - 1. Factors affecting energy balance

**Vitamins Required for Calcified Structures (A,D,E,K)**

**110 minutes**

- a. Vitamin A
  - 1. Chemistry
  - 2. Absorption, transport, and storage
  - 3. Functions
    - a. Visual purple
    - b. Relationship between vitamin A deficiency and cancer
    - c. Maintenance of epithelial cells and tissues
    - d. Promotion of bone remodeling
    - e. Activation of cell membranes
  - 4. Function in oral structures
    - a. Periodontium
    - b. Teeth
    - c. Salivary glands
    - d. Oral mucous membranes
    - e. Cleft lip and palate
  - 5. RDA
  - 6. Sources
  - 7. Therapy
  - 8. Toxicity
- b. Vitamin D
  - 1. Chemistry
  - 2. Absorption, transport, and storage
  - 3. Metabolism
  - 4. Function
  - 5. RDA
  - 6. Sources
  - 7. Therapy
  - 8. Deficiency
- c. Vitamin E
  - 1. Chemistry
  - 2. Absorption and metabolism
  - 3. Function
  - 4. Therapy
  - 5. RDA
  - 6. Sources
  - 7. Myths and facts

- d. 8. Toxicity
- 1. Vitamin K
- 1. Chemistry
- 2. Absorption
- 3. Function
- 4. Deficiency
- 5. Vitamin K and Periodontal disease
- 6. Therapy
- 7. RDA
- 8. Sources

**Vitamins Required for Calcified Structures (C) & Vitamins Required for Oral Soft Tissues and Salivary Glands**

**140 minutes**

- a. Vitamin C
  - 1. Chemistry
  - 2. Absorption, transport, and storage
  - 3. Metabolism
  - 4. Function
  - 5. RDA
  - 6. Sources
  - 7. Therapy
  - 8. Deficiency
- b. The B Vitamins
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- c. Folic Acid
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- d. Vitamin B<sub>12</sub> (Cobalamin)
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- e. Vitamin B<sub>6</sub> (Pyridoxine)
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- f.
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency

- 5. Toxicity
- 6. Effect on general and oral health
- g. Riboflavin
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- h. Niacin
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- i. Pantothenic Acid
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- j. Biotin
  - 1. Function
  - 2. Sources
  - 3. Requirements
  - 4. Deficiency
  - 5. Toxicity
  - 6. Effect on general and oral health
- k. Vitamin-like Substance and Other Claimed Nutrients

**Minerals Essential for Calcified Structures & Nutrients Present in Calcified Structures**

**120 minutes**

- a. Macrominerals
  - 1. Distribution
  - 2. Function
  - 3. Absorptions
  - 4. Storage
  - 5. Excretion
  - 6. Fluid & electrolyte balance
  - 7. Acid-base balance
  - 8. Dietary sources
  - 9. RDA
  - 10. Deficiency
  - 11. Toxicity
  - 12. Hypertension
  - 13. Effect on general and oral health
- b. Trace Minerals
  - 1. Activators of enzyme systems
  - 2. Function
  - 3. RDA
  - 4. Dietary sources
  - 5. Deficiency
  - 6. Toxicity

7. Effect on general and oral health

**Water and Minerals Required for Oral Soft Tissues and Salivary Glands 60 minutes**

- a. Distribution
  - 1. Factors which affect distribution
- b. Functions
- c. Sources
- d. Requirements
- e. Regulation
  - 1. Disturbances in water balance
- f. Sodium
  - 1. Function
  - 2. Daily requirements
  - 3. Sources
  - 4. Deficiency
  - 5. Dietary restriction
- g. Acid-base balance
- h. Hypertension

**Nutritional Requirements Affecting Oral Health in Women, During Growth & Development, in Older Adults  
60 minutes**

- a. Terms
- b. Growth
- c. Newborns
  - 1. Requirements
  - 2. Feeding Practices
  - 3. Oral Problems in infants
- d. Toddler & Preschool Children
  - 1. Toddlers
  - 2. Preschool Children
  - 3. Oral Problems of Toddlers and Preschool Children
- e. Adolescents
  - 1. Requirements
  - 2. Influential Factors on Eating Habits
  - 3. Counseling
- f. Maturity in the Life Cycle
  - 1. Physiologic Factors Influencing Nutritional Needs and Status
  - 2. Physiologic Changes in the Oral Cavity
  - 3. Socioeconomic and Psychological Factors
  - 4. Other Factors
  - 5. Nutrient Requirements

**Other Considerations Affecting Nutrient Intake 30 minutes**

- a. Food patterns
- b. Cultural Influences
- c. Working with patients of different cultures
- d. Factors affecting nutrient intake
  - 1. Budget
  - 2. Food preparation
  - 3. Food fads and misinformation

**Effects of Systemic Disease on Nutritional Status 100 minutes**

- a. Effects of chronic disease

- b. Mental health problems
  - 1. anorexia
  - 2. bulimia
    - a. Symptoms
    - b. Medical complications
    - c. Oral manifestations
    - d. Nutritional requirements
- c. Gustatory and olfactory functions
- d. Xerostomia
- e. The anemias
  - 1. Iron deficient anemia
  - 2. Plummer-Vinson Syndrome
  - 3. Megablastic anemia
  - 4. Folic acid deficiency
  - 5. Thalassemia
  - 6. Aplastic anemia
- h. Gastrointestinal Problems
- i. Cardiovascular Conditions
- j. Cerebrovascular Accidents
- k. Skeletal System
- l. Metabolic Problems
- m. Neuromuscular Problems
- n. Neoplasia
- o. AIDS

**Nutritional Aspects of Periodontal Disease**

**50 minutes**

- a. Physical effects of food on periodontal health
- b. Nutrient composition
- c. Food consistency
- d. Nutritional considerations for periodontal patients
- e. NUG
- f. Gingivitis
- g. Periodontitis
- h. Nutritional management
- i. Dietary recommendations
- j. Periodontal surgery
- k. Post operative care

**Nutritional Aspects of Alterations in the Oral Cavity**

**50 minutes**

- a. Conditions that interfere with food intake
- b. Xerostomia
- c. Root caries
- d. Dentition status
- e. Alveolar osteoporosis
- f. Glossitis

**Nutritional Assessment and Counseling for Dental Hygiene Patients 50 minutes**

- a. Diet counseling
- b. Evaluation of the Patient
- c. Assessment of Nutritional Status
- d. Formation of Nutrition Treatment Plan
- e. Facilitative Communication Skills
- f. General Principles for Caries Prevention
- g. Food Diaries
- h. Evaluation of Food Diaries



## Learner Objectives

### Overview of Healthy Eating Habits

1. Define the terms: nutrition, nutrients, metabolism, essential and non-essential nutrients.
2. Explain the energy value, kcal, of food.
3. List the general physiologic functions of the six nutrient classifications of foods.
4. Identify factors that influence food habits
5. Name the food groups in the Food Guide Pyramid.
6. State the number of servings needed from each of the food groups in the Food Guide Pyramid.
7. Identify significant nutrient contributions of each food group.
8. State the Dietary Guidelines for Americans and their purpose.
9. Identify dietary selections in each food group that significantly affect intake of calories, fats, salt, and sugar.
10. Assess dietary intake of a patient, using the Dietary Guidelines for Americans and the Food Guide Pyramid.
11. Diagram and explain a food label. Explain the requirements of both ingredient labeling and nutritional labeling.
12. Explain the term, Daily Value (DV), Daily Reference Value (DRV), and Reference Daily Intake (RDI). Compare the DV, DRV, and RDI to the RDA.

### Concepts in Biochemistry

1. Explain the role of biochemistry in dental hygiene and nutrition.
2. Compare and contrast the structure, function, and properties of the four major classes of biomolecules (carbohydrates, proteins, nucleic acids, and lipids).
3. Outline the structure, function, and property of monosaccharides, disaccharides, and polysaccharides.
4. Outline the structure, function, and property of amino acids and proteins.
5. Compare and contrast the roles of enzymes, coenzymes, and vitamins in nutrition.
6. Outline the structure, function, and property of fatty acids, triglycerides, and steroids.
7. Differentiate catabolism from anabolism. Explain connections between metabolic pathways in carbohydrate, protein, and lipid metabolism.

### The Alimentary Canal: Digestion and Absorption

1. Describe general functions of each digestive organ.
2. Identify chemical secretions necessary for digestion of energy-containing nutrients and in what parts of the gastrointestinal tract they are secreted.
3. Describe how digestion and absorption may affect nutritional status and oral health.

### CARBOHYDRATE: THE EFFICIENT FUEL

1. Define carbohydrates and the three most common classifications of carbohydrates.
2. Differentiate among monosaccharides, disaccharides, and polysaccharides.
3. Describe the health benefits of fiber, including difference effects of soluble versus insoluble fiber.
4. Identify and describe the physiologic role of carbohydrates.
5. Identify sources of carbohydrates.
6. Discuss the complications that result from carbohydrate excess and deficiency.
7. Describe the role of carbohydrates in the caries process.
8. Discuss the sugar substitutes and their assets, limitations and applications.
9. Describe the relationship between carbohydrates and lactose intolerance.

### PROTEIN: THE CELLULAR FOUNDATION

1. Describe the structure of an amino acid and the variations that exist.
2. Compare and contrast the terms essential and nonessential amino acids.
3. List the 9 essential amino acids and the 11 nonessential amino acids.
4. Discuss the measures of protein quality.
5. Explain the physiologic roles of protein.



6. Discuss the metabolism of protein. Include alterations in metabolism as a result of deficiency or excesses within the diet.
7. Identify the protein requirements for adults. Given a body weight, calculate the protein requirement.
8. Identify the factors which may impact the protein requirement for an individual.
9. Identify protein sources within the basic food groups. Discuss the bioavailability of animal and plant sources of protein.
10. Identify protein sources for individuals with various dietary restrictions.
11. State the problems associated with protein deficiency and excess.
12. Describe the PEM diseases of Kwashiorkor and Marasmus. Identify symptoms typical of the disease.
13. Outline the dental problems associated with protein deficiency.

#### **LIPIDS: THE CONDENSED ENERGY**

1. Explain the justification for the descriptive term "condensed energy" when referring to lipids.
2. Discuss the characteristics of a triglyceride lipid. Explain the effect of structure in solution.
3. Explain the term saturated, unsaturated, and polyunsaturated lipids. List sources of each and the impact on health.
4. Explain the terms trans and cis as related to the overall appearance of the fatty acid chain.
5. Identify the impact of the configuration on health.
6. What impact do Omega - 3 fatty acids have on the health of the individual when compared to Omega - 6 fatty acids?
7. Describe the appearance of true fats at room temperature. Identify factors that affect the consistency of fats.
8. List two compound lipid structures and their role in human physiology.
9. Discuss the lipoprotein, cholesterol. Identify the function, types, and physiology of cholesterol formation.
10. Identify and explain the physiologic role of lipids.
11. Discuss dietary fats and dental health.
12. Identify the requirements and sources for fat and fatty acids.
13. Identify the health concerns associated with over and under-consumption of fat.
14. List the advantages and disadvantages of fat replacers.

#### **UTILIZATION OF THE ENERGY NUTRIENTS: METABOLISM AND BALANCE**

1. Define the terms catabolism, anabolism.
2. Explain the metabolism of carbohydrates, proteins, lipids and alcohol.
3. Explain Basal Metabolic Rate (BMR) and the factors that affect the BMR.
4. Discuss the calculations made to determine Total Energy Requirements.
5. Identify the factors that affect energy balance.

#### **Minerals Essential for Calcified Structures**

1. List the minerals found in collagen, bones, and teeth.
2. Describe how the body uses minerals to help maintain fluid and electrolyte balance and acid-base balance.
3. Describe the mineral regulation in the body.
4. Identify the dietary sources, RDA, and any toxicity that may result in the human diet.
5. Discuss the effect of the mineral deficiency or oversupply in the oral cavity and human body.

#### **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.
2. List ultratrace elements present in the body.
3. Identify reasons why large amounts of one mineral may cause nutritional deficiencies of another.

#### **Vitamins Required for Oral Soft Tissues and Salivary Glands**

1. Describe the classification of the B complex vitamins.
2. Identify the chemistry, function, and absorption and metabolism for each of the B complex vitamins and vitamin-like compounds (thiamin, riboflavin, niacin, pantothenic acid, biotin, B<sub>6</sub>, and B<sub>12</sub>).

3. Identify the diagnosis of deficiency, and toxicity for each of the B complex vitamins.
4. Identify the food sources and Recommended Dietary Allowance for each of the B complex vitamins.

### **Fluids and Minerals Required For Oral Soft Tissues and Salivary Glands**

1. Describe the process of osmosis.
2. Discuss the electrolytes. Include the physiological role, requirements, sources, deficiency state, toxicity state, and regulation for each.
3. List normal fluid requirements and identify factors that may affect these requirements.
4. Discuss sodium, potassium, zinc, iodine and iron. Include the physiological role, requirements, sources, deficiency state, toxicity state, and regulation for each.
5. Identify oral signs and symptoms of fluid and electrolyte imbalances.
6. Discuss areas of nutritional concern with patients who have fluid and electrolyte imbalances.
7. Determine which diseases and medications may require patients to restrict sodium intake.

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

1. Assess nutrients commonly supplemented during pregnancy and lactation.
2. Use recommended guidelines to assess food intake of pregnant and lactating women for adequate nutrients.
3. Implement nutrition and oral health considerations for patients who are pregnant or breastfeeding.
4. Describe each factor affecting fetal development.

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

1. Describe the major dietary life cycles and the nutritional requirements specific to each cycle.
2. Identify the nutritional requirements specific to the adolescent female.
3. Discuss ways to handle typical nutritional problems that occur in infants, young children, school-age children, and adolescents.
4. Apply dental aspects related to nutritional needs during infancy, early childhood, elementary school years and adolescence to patient care.

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

1. Discuss ways to handle typical nutritional problems occurring in older adults.
2. Examine dental considerations of nutritional needs that occur in older patients.
3. Identify nutrition education needs for older patients.
4. Discuss physiological changes altering an older individual's nutritional status.
5. Discuss differences in amounts of nutrients needed by older patients compared with younger patients.

### **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.
2. Distinguish between primary and secondary nutritional deficiencies.
3. Discuss disease states, conditions, and accompanying treatments likely to affect nutritional intake.
4. Critically assess the implications of a patient's systemic diseases or conditions for optimal oral health.
5. Describe the procedure to assess a patient's nutritional status.
6. Identify three major changes that occur in the oral cavity as a result of nutritional deficiencies.
7. Describe the role of nutritional deficiencies in cheilosis, angular stomatitis, glossitis, gingivitis, oral mucosa inflammation.
8. Describe the nutritional management of acute problems of the oral mucosa.
9. Identify the situations when vitamin supplementation is appropriate.

### **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.
2. Explain the relationship of sugar alcohols, starches, and sugars to dental caries.
3. Explain the relationship between the texture of food and dental caries.
4. Discuss the comparative cariogenicity of starch and sugar in humans.
5. Explain the significance of the Stephan Curve.

6. Know the instrument used to assess diet in relation to caries.
7. Know the groups of foods which are high caries risks.
8. Discuss the evidence for the relationship of caries to bacteria and carbohydrates.
9. List the bacteria that play a significant role in caries development.
7. Know the groups of foods which are high caries risks.
8. Discuss the evidence for the relationship of caries to bacteria and carbohydrates.
9. List the bacteria that play a significant role in caries development.
10. Describe a diet which would be considered non-cariogenic.

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

1. Identify the means by which nutritional deficiencies can contribute to periodontal disease.
2. Discuss the conclusions about the local effects of the physical consistency of food on periodontal health.
3. Identify the etiology of ANUG and describe the recommended dietary prescription.
4. Identify and describe each step for giving nutritional guidance to a patient with chronic periodontitis.
5. Describe the goal for prescribing a diet before periodontal surgery.
6. List three benefits from good nutrition in regard to periodontal tissues.
7. Discuss the use of firm, fibrous foods to a) remove plaque, b) stimulate saliva, and c) provide for food removal or oral clearance.
8. Discuss the need for high protein food supplements before and after periodontal surgery.
9. Describe a recommended post-operative dietary management for office periodontal patients.

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

1. Describe the common signs and symptoms of xerostomia and glossitis.
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.
3. Identify dietary guidelines appropriate for a patient undergoing oral surgery and a patient with a new denture, before and after insertion.

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

1. Describe the two effects of nutrition on dentition.
2. Identify the food choices and eating habits which merit attention during a diet counseling session.
3. Explain Shaw's statement, "the frequency of eating, the amount of food retained in the mouth particularly on tooth surfaces, and the length of time that food residues are retained in critical areas are more important than the total amount of sugars consumed."
4. What should the diet counselor incorporate into the diet prescription whenever possible.
5. Discuss the basic prerequisite for accomplishing dietary change and the minimal requirements for a successful dietary counseling service.
6. Describe the type of patient that would most likely benefit from a diet counseling service.
7. List the communication techniques that will have a beneficial effect on effective communication.
8. Explain the first and basic goal in interviewing. Discuss the characteristics of the physical setting, diet interviewer, and the interview techniques that will result in a successful interview.
9. Explain the four rules that should be adopted when making dietary modifications.
10. Describe the instructions given to a patient keeping a 5 Day Food Intake Diary.
11. Summarize the guidelines and the dietary counseling for caries prevention and control.

## **APPENDIX I**

### *Grade Computation Sheet*

## Nutrition Grade Computation Sheet

**Test Grades:**

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_

**Test average:** \_\_\_\_\_

<b>Test Average:</b>	_____	<b>X .75</b>	_____
<b>Personal Dietary Analysis Project</b>	_____	<b>X .25</b>	_____

**Sum of above:** \_\_\_\_\_

**Final Grade** \_\_\_\_\_

## **APPENDIX II**

### ***PERSONAL DIETARY ASSESSMENT INFORMATION***

## **PERSONAL DIETARY ASSESSMENT PROJECT**

### **Objectives**

Upon completion of this project, student will be able to:

1. Objectively assess their patient's personal dietary patterns using the [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov) SuperTracker
2. Practice the process of recording and analyzing food intake for its nutritive and cariogenic value.
3. Use one's nutritional and dental knowledge in contributing to better general and oral health for self and patients.

**Procedure** (All required form may be found on Blackboard or [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov))

- Fill out the LIT Caries Risk Assessment, Nutrition Risk Assessment, and Nutrition Case History in Syllabus
- Type Food Diary, Carbohydrate Intake Analysis, and Nutrient Dietary Assessment Form in Syllabus
- Menu Planning Form in syllabus
- Food Group & Calories Report (average of 3 days), from [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov)
- Type Written Report ( at least two pages)

### **1. Food Diary Form**

- A. Record and type** in everything you eat and drink for 3 consecutive days. Use the Stegeman's Food Diary Form found on page 31. *Do not choose days when you are dieting, fasting, or ill. You will not be graded on what you eat.*
  - Be very accurate in determining the amounts eaten. Ex. ½ cup, 1 cup
  - Remember to include extras such as mayonnaise on your sandwich, butter on your toast, salad dressing, chewing gum, and fluids (e.g., water, alcohol).
  - Use brand names whenever possible (e.g., Cheerios, McDonald's).
  - Record food preparation methods, when applicable (e.g., baked, fried, grilled).
  - Do not include supplements.
  - Circle in **RED** or **HIGHLIGHT** each fermentable CHO
- B. Enter data into [www.ChooseMyPlate.gov](http://www.ChooseMyPlate.gov) at Super Tracker tab**
  - Register a login using your height, weight, age and gender.
  - Click Food Tracker
  - Enter each food item and beverage separately for each meal and snack for that specific day.
  - Enter food details on the left side of the screen and click add. Do this for each food consumed
  - You will see the analysis on the right side of the screen.
  - Click on my reports to create the food groups and calories report. You will include all three days to get an average.

### **2. Fermentable Carbohydrate Analysis Worksheet**

- A.** Transfer the food items from the Food Diary to this CHO worksheet. Type in each beverage and food consumed.
- B.** For each food circled/highlighted, comment on why it is cariogenic or not cariogenic. An example of a format is in your textbook, p. 376 (Fig.18-10).
- C.** Total the number of minutes of acid exposure each day. Consider that one exposure may include several fermentable CHOs, and that not every meal is cariogenic. **2 hours/day is considered high.**
- D.** The Fermentable Carb Analysis Worksheet is to **be typed and placed directly with each Day of Food Diary that it corresponds to. Ex. Day 1 of Food Diary has a corresponding Ferm CHO Worksheet, Day 2 has a corresponding Ferm CHO, & Day 3. Label BOTH forms as**

**Day 1, Day 2, Day 3. Provide 3-day average of acid exposure.**

**3. Reports from ChooseMyPlate.gov –**

- A. Print a 3 day average FOOD GROUP & CALORIE report to show Food Groups that you were deficient in and those in excess.
- B. Print an average summary report of all 3 days

**4. Dietary Assessment Form**

- A. Record your intake of only the **Highlighted, bolded, underlined** nutrients on this form (Total calories, CHO, Protein, Total Fat, Riboflavin, Folate, Calcium, Iron, and Sodium).
- B. Average them and compare to the Daily Allowance
- C. Determine as adequate, inadequate or high
- D. The nutrient Report from ChooseMyPlate.gov will be an aid in this report.

**5. Nutrition Case History (Form in Syllabus)**

- Include relationship of medication, alcohol, or smoking to your nutritional status.?
- Dental history. List all pertinent information from your dental/oral history form from the clinic, including:
  - Oral hygiene status (i.e. amount of plaque)
  - Periodontal problems—includes description of gingival condition
  - Orthodontics
  - Number of restorations
  - Does your dental health affect nutritional intake? Does your nutritional intake have an impact on your oral health?

**6. LIT Caries Risk Assessment & Nutritional Risk Assessment**

- Fill out these assessments

**7. Menu Planning Form**

- Plan a menu that would include all the recommended nutrients.

**6. Written Summary:** (Last in binder) **2 -3 typed pages.** Double spaced, Ariel Font size 12. Using the information from ChooseMyplate.gov 1.) 2010 Dietary Guidelines 2.) Nutrient Intake and 3.) Food Group Report, compare your intake of basic food groups AND the nutrients highlighted on Dietary Assessment form.

**MAIN Body of paper consists of:**

- A. Comparing your intake with 2010 Dietary Guidelines of ChooseMyPlate.gov
  - Where can you improve? What food groups did you do well in?
  - From the findings in your report, construct a list of foods you could add to meet all or most nutrient needs. Comment on the possibility of adding these foods to your diet. Identify foods from your diet that are in excess. Comment on the possibility of reducing these foods.
  - What specific foods or beverages did you consume that helped to meet the recommendations
  - What nutrients were affected by your diet?
  - What specific foods or beverages can you modify? What dietary guidelines did you follow?
  - What health issues could potentially occur from your diet?
  - What oral health issues could be affected by your diet?
  - Explain items from your medical or dental history which requires modification in your intake.
  - Explain findings from the carbohydrate analysis and what they mean.
- B. Conclusions and expected success of the program:



- Conclude with statements addressing what was learned from the personal assessment project and how you will improve your dietary intake by including nutrient dense foods
- Discuss what you anticipate changing in your diet while in school.
- What realistic 3 goals can you set for yourself to improve your diet?
- Create a realistic menu for one day on the Menu Planning Form

#### **7. Professionalism**

Edit your paper.

- Grammar/spelling
- Completeness—did you turn in all parts of the assignment?
- 1.) 3 Day TYPED Food Diary
- 2.) 3 CHO Worksheets
- 3.) Dietary Assessment Form
- 4.) Nutrient Report (an average report of all 3 days) from ChooseMyplate.gov
- 5.) Average Food Group Report Summary of the 3 days
- 6.) Menu Planning Form
- 7.) Case History and Risk Assessment forms
- Accuracy—correct values and calculations, information presented, appropriate dental terms
- Logic of conclusions and appropriateness of recommendations—your conclusions must be consistent with the evidence, and your recommendations must be in line with current nutrition knowledge
- Place the completed project in a binder or folder in a daily order with Nutrition Case History first and Written Summary last.

#### **Evaluation:**

Place the completed project in a binder or folder in a daily order with Nutrition Case History first and Written Summary last.

*Plagiarism will not be tolerated*

You will be graded according to the Personal Assessment Project Evaluation Rubric on pages 33-34.

**Lamar Institute of Technology Dental Hygiene Oral Health Risk Assessment and Profile**

**Student Name:** \_\_\_\_\_

Risk assessment provides information regarding factors influencing an individual's susceptibility or potential risk for the onset or progression of certain oral diseases beyond those noted during traditional clinical assessment. A thorough annual assessment of an individual's risk factors significantly influences formulation of individualized, patient-specific treatment preventive self-care strategies as well as patient management and expected outcome.

<b>RESTORATIVE RISK FACTORS (Caries, Trauma/Structural Breakdown)</b>	<b>Date</b>	<b>Date</b>	<b>Date</b>	<b>Recommended Preventive Care and Treatment (Date Entry)</b>
*Demineralization				
Infrequent dental exams				
Prior caries experience /5or more restorations				
Poor/faulty restoration margins				
Exposed root surfaces/erosion/abrasion				
Missing teeth				
Malocclusion				
Poor oral hygiene				
*Cariogenic diet (Frequent daily exposure to sugars and simple carbohydrates, 5 or more)				
*Decreased salivary flow				
Mentally challenged				
Large amalgams involving cusps				
Chronic TMJ problems				
Functional oral habits/bruxing				
Contact sports (without use of mouth guard)				
Physical disorders (e.g. seizures)				
Fixed orthodontic appliances				
<b>*Generally = High Risk</b>				
SUMMARY OF <b>RISK LEVEL</b> (Circle one) Relative to individuals without the risk factor	Low	Low	Low	
	Mod	Mod	Mod	
	High	High	High	

**Risk Level is determined** by the number, type and /or combination of existing risk factors related to **the patient's responses during the interview process** concerning beliefs, reported severity of conditions/chief complaints, as well as clinical findings. The factors listed have the potential to be any of the 3 levels; low, if it is the only factor present (i.e. age), moderate to high if reported or noted as such or if the factor exists in combination with other factors that may increase the patient's risk. (**\*Generally = High Risk**).

## Determine Your Nutritional Health

**The Warning Signs of poor nutritional health are often overlooked. Use this checklist to find out if you or someone you know is at nutritional risk.**

Read the Statements below. Circle the number in the yes column for those that apply to you or someone you know. For each yes answer, score the number in the box. Total your Nutrition Score.

	YES
I have an illness or condition that made me change the kind and/or amount of food I eat.	2
I eat fewer than 2 meals per day.	3
I eat few fruits or vegetables, or milk products.	2
I have 3 or more drinks of beer, liquor or wine almost every day.	2
I have tooth or mouth problems that make it hard for me to eat.	2
I don't always have enough money to buy the food I need.	4
I eat alone most of the time	1
I take 3 or more different prescribed or over-the-counter drugs a day.	1
Without warning to, I have lost or gained 10 pounds in the last 6 months	2
I am not physically able to shop, cook, and/or feed myself	2
<b>TOTAL</b>	

Total Your Nutritional Score. If it's –

- 0-2            **Good!** Recheck your nutritional score in 6 months.
  
- 3-5            **You are at moderate nutritional risk.** See what can be done to improve your eating habits and lifestyle.  
Your office on aging, senior nutrition program, senior citizens center, or health department can help.  
Recheck your nutritional score in 6 months.
  
- 6 or more    **You are at high nutritional risk.** Bring this checklist the next time you see your doctor, dietician, or other qualified health or social service professional. Talk with them about any problems you may have. Ask for help to improve you nutritional health.

**Remember that warning signs suggest risk, but do not represent diagnosis of any condition.**

(The Dental Hygienist's Guide to Nutritional Care, 2<sup>nd</sup> Edition, page 319)

## NUTRITION CASE HISTORY

### Personal Assessment

Date	_____	Age	_____
Name	_____	Height	_____
Occupation	_____	Weight	_____
Marital Status	_____	Desirable Weight	_____
Nationality	_____	Food Allergies	_____
Religion	_____		

### Personal and Social History

If working or student? Number of hours/week? i.e. 8:00 to 5:00?

Activities that foster between meal snacks (TV, reading, studying, etc.)

Number of meals/ Snacks per day

Exercise?

How often to you eat away from home?

Who does the cooking and/or shopping?

Who lives at home?

### Medical History related to dental health

Mouth Breather

no  yes

Food Allergies

no  yes

Medications/Supplements

no  yes, identify

Smoking

no  yes, identify

Other Conditions that relate to dental health

### Clinical Observations

General Appearance: (Alertness, Gait, Posture, Muscular and Skeletal Development, Overweight or Underweight, etc.)

normal  not healthy, explain

Skin changes

normal  not healthy, explain

Lips, tongue and oral mucous membrane changes

normal  not healthy, explain

Periodontal health

healthy  not healthy, explain

Determine the BMI

Classification: \_\_\_\_\_

### Other Comments

### Carbohydrate Intake Analysis Worksheet

<b>Carbohydrate (CHO) Intake Analysis Worksheet</b>			
<b>Fermentable CHO</b>	<b>Cariogenic?</b>	<b>Reason</b>	<b>Period of Exposure to Enamel</b>
<b>TOTAL EXPOSURE TIME:</b>			_____

Average:  
 Day 1 + Day 2 + Day 3 = sum of all acid exposures / 3 days = average  
 \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ = \_\_\_\_\_ / 3 = \_\_\_\_\_

**Dietary Assessment**

Nutrient	1	2	3	Avg of 3 days	Daily Allow	Comparison	
						Adequate Inadequate	High
<b>Total Calories</b>							
<b>CHO*</b> (45-65% of total Kcal)							
<b>Protein*</b> (10-35% of total Kcal)							
Fiber					20-35 g/day		
<b>Total Fat*</b> (20-35% of total Kcal)							
SFA* (≤7% of total Kcal)							
MUFA* (up to 15% of total Kcal)							
PUFA* (up to 10% of total Kcal)							
Alpha-Linolenic Acid (Omega 3)					1.1 g/day women; 1.6 g/day men		
Cholesterol					≤300 mg/day		
Vitamin A							
Vitamin C							
Vitamin E							
Thiamin							
<b>Riboflavin</b>							
Niacin							
<b>Folate</b>							
Vitamin B <sub>6</sub>							
Vitamin B <sub>12</sub>							
<b>Calcium</b>							
Phosphorus							
Magnesium							
<b>Iron</b>							
Zinc							
Potassium							
<b>Sodium</b>					2300 mg/day		
Water					9c/d women; 13 c/d men		

**\*Calculations are based on your average Kcal intake for the 3 days.**

## Stegeman: The Dental Hygienist's Guide to Nutritional Care

### Food Diary Form

FOOD DIARY				
Day _____				
TIME	PLACE	FOOD EATEN	AMOUNT EATEN	HOW PREPARED
<b>Instructions:</b> <ol style="list-style-type: none"><li>1. List <i>everything</i> you eat or drink on 3 consecutive, typical days.</li><li>2. Use 2 weekdays and 1 weekend day.</li><li>3. Include extras such as chewing gum, sugar and cream in coffee, or mustard on a sandwich.</li></ol>				



## Stegeman: The Dental Hygienist's Guide to Nutritional Care

### Menu Planning Record

<b>Menu Planning Record</b>	
Instructions: Create a realistic menu for 1 day.	
<b>Time</b>	<b>Meal</b>
	Breakfast
	Morning Snack
	Lunch
	Afternoon Snack
	Dinner
	Evening Snack
Totals/Day  Fruit: Vegetable: Starch/Bread: Milk: Fat: Protein/Meat: Others:	

### Personal Dietary Assessment Project Evaluation Form

LIT Competency Statement	CC3. Continuously perform self-assessment for lifelong learning and professional growth. HP6. Evaluate and utilize methods to ensure the health and safety of the patient and the dental hygienist in the delivery of dental hygiene.
--------------------------------	--

Student Name \_\_\_\_\_  
Date \_\_\_\_\_ Grade \_\_\_\_\_

**The following criteria will be used to determine a competency of 75% or higher on the Personal Dietary Assessment Project**

**1= Meets all requirements    1/2= Needs improvement    0= Requirements not met**

	Points earned	
<b>Forms/Reports</b>		
1		Correctly filled out Food Diary Form and the Menu Planning Record.
2		Correctly filled out Nutrient Dietary Assessment form.
3		Correctly filled out the Nutritional Case History
4		Correctly filled out the LIT Caries Risk Assessment and Nutritional Risk Assessment Form
5		Correctly filled out Carbohydrate Intake Analysis Worksheet.
6		Completed and printed the averaged Food Group Calorie report to show Food Groups from <a href="http://www.choosemyplate.gov">www.choosemyplate.gov</a> .
<b>Dietary Assessment</b>		
7		Commented on each item on the Dietary Assessment form
8		Provided foods/beverages consumed for each Highlighted nutrient
9		Correct calculations for Daily Allowances were included
10		Correctly determined whether the Highlighted nutrients were Adequate or not.
<b>Carbohydrate Analysis</b>		
11		Correctly identified all fermentable CHO's
12		Correctly identified cariogenic state
13		Correctly and adequately stated reason
14		Correctly determined number of minutes of acid exposure
15		Provided 3-day average of acid exposure
<b>Written Report</b>		
16		Discussed ways the diet could be improved and where the diet was good.
17		Discussed specific foods or beverages that helped meet the recommendations
18		Discussed which nutrients were affected by the present diet
19		Listed the foods in the diet that provided nutrients and which foods could have

	<b>Points earned</b>	
		prevented a deficiency.
20		Discussed specific foods or beverages that can be modified and what dietary guideline were followed
21		Discussed what health issues could potentially occur from the present diet
22		Discussed what oral health issues could be affected by the present diet
23		Explained items from the medical or dental history which require modification in dietary intake
24		Adequately and accurately commented on findings from the Carbohydrate analysis form
25		Provided specific recommendations from the Carbohydrate analysis form
26		Correctly and adequately provided a relationship to the health of the oral cavity and the result of the Carbohydrate analysis form
<b>Conclusions</b>		
27		Included expected success of program
28		Included 3 specific, measurable, and realistic goals
29		Included changes made or anticipated making
30		Listed foods consumed in excess
31		Adequately commented on the possibility of reducing these foods
32		Included a realistic menu for one day
<b>Professionalism</b>		
33		No spelling or grammatical errors
34		Completed project was place in a binder or folder in daily order with Nutrition Case History first and Written Summary last
35		All forms and written summary were turned in on the day they were due