**HUN1201 ESENTALS OF HUM NUTR**

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**Course Description:** The Essentials of Human Nutrition is a general education course designed to acquaint students with the specific role of carbohydrates, fats, proteins, vitamins, minerals, and water in daily life. Students will learn how the human body systems manage the breakdown, assimilation, and excretion of nutrients and their metabolic wastes. Students will also learn the relationships between food and optimal health including physical fitness and the relationships between nutritional imbalances and disease. (3 hr. lecture)

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<thead>
<tr>
<th>Course Competency</th>
<th>Learning Outcomes</th>
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<tbody>
<tr>
<td><strong>Competency 1:</strong> The student will show knowledge of nutrient classes by:</td>
<td>2. Numbers / Data 3. Critical thinking 6. Social Responsibility 8. Computer / Technology Usage</td>
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<tr>
<td>1. Understanding the nutrient classes essential to the human body.</td>
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<td>2. Relating the nutrient classes to the foods they consume.</td>
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<td>3. Differentiating between nutrient and non-nutrient substances found in food.</td>
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**Competency 2:** The student will show knowledge of the Dietary Standards by:

1. Defining Dietary Reference Intakes (DRIs). 2. Identifying their role in diet planning.

**Competency 3:** The student will show knowledge of the National Dietary Recommendations and Policies by:

1. Understanding Dietary Guidelines. 2. Demonstrating role of label reading in planning a healthy diet. 3. Creating a healthy diet plan using the current food guide and nutrition recommendations.

**Competency 4:** The student will comprehend the concept of nutrient and energy density by:

1. Distinguishing between energy and nutrient density. 2. Applying the concepts of energy and nutrient density to their eating pattern.

**Competency 5:** The student will show comprehension of the digestive system by:

1. Understanding the enzymes and hormones that participate in the digestive process. 2. Describing the processes by which carbohydrates, proteins, and lipids are digested, absorbed, transported and excreted.

**Competency 6:** The student will display comprehension of carbohydrates in nutrition by:

1. Demonstrating knowledge of carbohydrate synthesis, structures, classification, function, and metabolism. 2. Differentiating the dietary sources of carbohydrates including glucose, fructose, sucrose, maltose, lactose, starch, and fiber. 3. Understanding the conditions and disease processes that stem from CHO imbalances such as hypoglycemia, diabetes mellitus, and lactose intolerance. 4. Explaining the role of fiber in disease prevention and treatment. 5. Demonstrating knowledge of the role of carbohydrates in the human diet and applying ways in which to implement them.
### Competency 7:
The student will display a comprehension of lipids in nutrition by:

1. Demonstrating knowledge of lipid synthesis, structures, classification, function, and metabolism.
2. Classifying dietary sources of lipids by point of saturation, carbon chain length and biological function.
3. Differentiating among the different types of lipoproteins (chylomicrons, VLDL, LDL, and HDL), and explaining their role in lipid transport.
4. Demonstrating knowledge of the relationship of lipids and chronic diseases such as obesity, cardiovascular disease, and cancer. Demonstrating knowledge of the role of lipids in health and disease and applying practical ways to implement them.

### Competency 8:
The student will show comprehension of proteins in nutrition by:

1. Demonstrating knowledge of protein synthesis, structures, classification, function, and metabolism.
2. Distinguishing the dietary sources of proteins including essential and non-essential amino acids and their dietary sources.
3. Demonstrating knowledge of the current dietary recommendations for proteins, and describing practical ways of implementing them.
4. Demonstrating knowledge of the relationship between the deficiency or excess of protein to human health.
5. Explaining the process of protein synthesis.

### Competency 9:
The student will show a comprehension of water-soluble and fat-soluble vitamins by:

1. Comparing the water soluble and fat-soluble vitamins in regard to absorption, transportation, excretion, and toxicity.
2. Explaining the various causes of vitamin deficiencies in the body.
3. Identifying the characteristics that relate to the stability of each vitamin in the processing, storage, and preparation of food.
4. Describing the function, requirements, and sources for each water-soluble vitamin and fat-soluble vitamin.
5. Identifying the deficiency disease, and describing the symptoms for each water-soluble and fat-soluble vitamin.
6. Recognizing the potential toxicity and discussing the causes and symptoms for each water-soluble and fat-soluble vitamin.

### Competency 10:
The student will show a comprehension of Minerals and Water by:

1. Comparing the major and trace minerals in regard to absorption, transportation, excretion, and toxicity.
2. Explaining the various causes of mineral deficiencies in the body.
3. Identifying the characteristics that relate to the stability of each mineral in the processing, storage, and preparation of food.
4. Describing the function, requirements, and sources for each mineral.
5. Identifying the deficiency disease, and describing the symptoms for each mineral.
6. Recognizing the potential toxicity and discussing the causes and symptoms for each mineral.
7. Describing the functions, requirements, and sources of water for the human body.
8. Recognizing the health problems resulting from fluid imbalance due to under or over consumption of water.

### Competency 11:
The student will show comprehension of the energy expenditure pathways by:

1. Understanding dynamics of energy balance and its components: basal metabolic rate (BMR), physical activity (PA), thermic effect of food (TEF), and thermogenesis.
2. Exploring the benefits of physical activity on aerobic and anaerobic metabolism.
3. Describing the factors involved in weigh management.

### Competency 12:
The student will be able to display comprehension of food safety by:

1. Evaluating information on facts and myths of food additives.
2. Explaining the causes, symptoms, and prevention of food-borne illnesses.
3. Recognizing the possible health effects of environmental contaminants in food and water.
4. Exploring the implications of food additives and biotechnology on health and the environment.
**Competency 13:** The student will apply the principles of nutrition by:

1. Analyzing their food intake by using diet analysis software. 2. Evaluating the results of their own dietary analysis in terms of meeting their individual needs and prevent chronic disease. 3. Designing/Creating a healthy diet using the components of healthy dietary planning.