**MASTER COURSE OUTLINE**
Prepared By: Christy Welch, Laurie Odegaard Date: May 2020

**COURSE TITLE**
Nutrition

**GENERAL COURSE INFORMATION**

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| Dept.: NUTR& | Course Num: 101 | (Formerly: ) |
| CIP Code: 51.1613 | Intent Code: 21 | Program Code: 326 |
| Credits: 5 | | |
| Total Contact Hrs Per Qtr.: 55 | | |
| Lecture Hrs: 55 | Lab Hrs: 0 | Other Hrs: 0 |
| Distribution Designation: Natural Science NS | | |

**COURSE DESCRIPTION** (as it will appear in the catalog)
This introductory course in nutrition will focus on current ideas in nutrition and areas of research. This class will present information on the chemistry and the biological function of nutrients in the body. Diseases associated with an excess or deficit in nutrients will also be explored. Students will acquire a better understanding of some impacts of food choices on a personal level.

**PREREQUISITES**
Completion of ENGL 099 or placement in ENGL&101 recommended.

**TEXTBOOK GUIDELINES**
A current introductory nutrition text. The text used must have approval of the Math/Science Division Chair.

**COURSE LEARNING OUTCOMES**
*Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills:*

1. Classify essential, nonessential and conditionally essential nutrients.
2. Calculate the energy (Calories) contained in a serving of food based on the mass of carbohydrate, lipid and protein.
3. Assess current nutritional status through a personal dietary analysis.
4. Distinguish the nutritional significance of trans, saturated, and unsaturated fats.
5. Compare the digestive and absorptive events that take place in the mouth, stomach and small intestine.
6. Explain how simple diffusion and osmosis allow nutrients to cross cell membranes.
7. Describe mechanisms in the body to control glucose levels in the blood; propose nutritional strategies that avoid or reduce the severity of diabetes.
8. Diagram the physical structure of mono, di, and polysaccharides.
9. Classify the primary, secondary and tertiary structure of a protein; discuss why protein is essential to maintaining a healthy diet.
10. Describe the triglyceride digestion process; explain why some fats are essential in the human diet. Further, describe several important functions of lipids in cell function.

11. Distinguish why vitamins are needed for proper function of human metabolism; contrast fat soluble and water soluble vitamins.
12. Assess the value of trace minerals in the diet.
13. Describe what is meant by the term 'water balance;' support water as an essential part of a balanced diet.
14. Calculate a body mass index and explain the significance of this measurement; explain important factors impacting body weight regulation.
15. Discuss the term 'Life Cycle Nutrition'; examine the general changes in nutritional needs as a human progresses through the life cycle changes.

**INSTITUTIONAL OUTCOMES**
None

**COURSE CONTENT OUTLINE**
- Nutrition defined; measurement of energy in food; analyzing nutritional claims; impact of nutrition on human health
- Malnutrition defined; utilizing RDAs, EARs, AIs and ULs to assess nutrient intakes; performing a personal nutritional assessment; reading and interpreting food labels
- The chemistry of nutrition; digestion and absorption of nutrients; overview of metabolic pathways
- Simple versus complex carbohydrates; carbohydrate digestion, absorption and circulation; glucose regulation; Type 1 and type 2 diabetes
- Protein structure; protein digestion, absorption and circulation; mutations in DNA; nitrogen balance and excretion; functions of proteins
- Lipid defined; fats and oils; fatty acid structure; essential and nonessential fatty acids; triglyceride digestion, absorption and circulation; types and functions of lipoproteins; dietary lipids and health
- Vitamin function; fat-soluble vs water-soluble vitamins; general classes of vitamins; using dietary vitamin supplements
- Significance of water in the diet; electrolytes in the body; hydration and dehydration; essential minerals
- Trace minerals
- Energy balance defined; factors influencing energy requirement; body weight and composition assessment; causes of obesity; hunger regulation
- Life cycle nutrition defined; nutritional needs during pregnancy; nutritional needs of an infant, child and adult; nutritional needs of older adults
- The following may also be covered as time permits:
- Health benefits of physical activity; metabolic changes during physical activity; physiologic changes in response to physical activity; Impact of physical activity on dietary requirements
- Eating disorder defined; eating disorders described; causes of eating disorders

**DEPARTMENTAL GUIDELINES** *(optional)*
- The overall course percentage will be based on the following weighted categories:
  - Lecture exams (including 3-5 tests) collectively worth 60-70%,
  - Class assignments/quizzes collectively worth 30-40% of the overall score
- A standard grade scale will be used for this course with a 2.0 grade point corresponding to 70-72%.
- Individual instructors may choose to include other topics in addition to those listed in the course content. The additional content might include an exploration of the health and nutrition impacts of alcohol use, food safety, and/or social aspects of nutrition.
- All exams are proctored. When possible, exams are held on campus. Online and hybrid courses may have exams online; they may or may not be proctored.

- PO5 should be assessed: Students will be able to solve problems by gathering, interpreting, combining and/or applying information from multiple sources.

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**DIVISION CHAIR APPROVAL** **DATE**