College: Science and Engineering

Department: Biological Science

Programme: Biochemistry

Course Code: BCH 412

Units: 2

Course Title: Nutritional Biochemistry

Course Lecturer: Mrs T.D. Olaolu

Semester: Alpha

Time of Lecture: Tuesdays (2- 4 pm)

Location: Lecture Rooms 402, BCH Lab.

Brief Overview

This course exposes students to in-depth knowledge of the nutritive value of foods, nutritional disorders, prevention and therapy. It also exposes students to the concepts of nutritional status, recommended dietary allowance and nutrient requirements in relation to physical activity and ageing.

A. Course Objective/ Goals

Students should be able to:

- Discuss the importance of food nutrients to living organisms especially humans
- Enumerate and describe the nutritional disorders and how they can be prevented.
- Explain the concept of the recommended dietary allowance
- Explain the concepts of nutritional status and requirements
- Explain the relationship between food nutrients and health

B. Method of Lecture Delivery / Teaching: Electronic media and face to face lecture method

C. Course Outline

Module 1 – Food Nutrients
Module 2 – Energy value of foods and energy expenditure by mammals
Module 3 – Nutritive value of foods (carbohydrates, proteins and vitamins)
Module 4 – Nutritive value of foods (Vitamins, minerals and water)
Module 5 – Nutritional disorders, prevention and therapy
Module 6 – Nutritional status and nutritional requirements
Module 7 – Recommended dietary allowances
Module 8 – Assessment of nutrient status

Module 9 – Nutrients requirement to physical activity and ageing
Module 10 – Diet and disease, obesity and under nutrition
Module 11/12 – Laboratory sessions
Module 13 – Revision

D. Tutorials : would be given where and when necessary

E. Structure of Programme/ Method of Grading

12 weeks for Lectures and Laboratory sessions.
1 week for revision
Continuous assessment of students' performance would be carried out on a weekly basis.
Mid semester exams – 20%
Laboratory sessions – 10%
Omega Semester exams – 70%

F. Ground Rules and Regulation

All classroom and Laboratory rules would be adhered to.

G. Topic for Term Paper/ Assignment

- Discuss the role of nutrition in ageing

H. Alignment with Goals and Vision of Landmark University

The motto of Landmark University (Breaking new grounds) would be further strengthened by exposing the students to in-depth laboratory sessions and classroom lectures on nutritional biochemistry.

I. Contemporary Issues / Industry Relevance

The knowledge of this course may be relevant in helping to formulate commercializable food products that have the recommended dietary allowance (RDA) required for the good health of humans.

J. Recommended Reading:

- *Alghamdi A. (2006). Energy of food. Retrieved from http://faculty.ksu.edu.sa/27389/Documents/Microsoft%20PowerPoint%20-%20 food%20energy%20Lecture%202.pdf*
- *Callanan A (Eds.). (2000). Food and Nutrition handbook, Italy. World Food Programme.*
- *Chutani AM (2006). Nutritional biochemistry; Nutrition and dietary habits. Retrieved from www.nsdl.niscair.res.in/jspui/bitstream/123456789/586/ 1/Nutritiondietary.pdf*
- *Grade 12 Active healthy lifestyles, Module C: Nutrition. Retrieved from; http://www.edu.gov.mb.ca/k12/cur/physhlth/frame_ found_gr12/rm/module_c.pdf*
- *Wang D, Lin H, Kan J, Liu L, Zeng X, Shen S (Eds). (2012). Food Chemistry. New York: Nova Science Publishers Inc.*
- *Edris M. (2004). Nutrition for Health Extension Workers – Lecture notes. Ethiopia public health training initiative.*

- *Nelson, D. L. and. Cox, M. M. (2005): Lehninger's Principles of Biochemistry 4th Edition (pp. 921-1081) W. H Freeman and Company, New York. ISBN: 1-4039-4876-3*
- *Nutrient value of some common foods (2008). Health Canada. Retrieved from www.healthcanada.gc.ca/cnf.*
- *Tom Brody (1999). Nutritional Biochemistry, 2nd edition. Academic press, California, USA.*