COLLEGE OF SCIENCE AND ENGINEERING
LANDMARK UNIVERSITY

BLY112 (INTRODUCTORY CELLULAR BIOLOGY) COURSE COMPACT

College: Science and Engineering

Department: Biological Sciences

Course code: BLY112 Units: 3

Course Title: Introductory Cell Biology

Course Lecturer(s): Dr. Osemwegie,OO (Course coordinator), Miss Afolabi, AT (Teaching assistant).

Semester: Alpha Semester; 2013/2014 Academic Session.

Time of Lecture: As allocated by the time table committee

Location: As allocated by the time table committee.

A. *Brief Overview*
The course introduces the knowledge of cell evolution and history, structure/organization, types and their contrasts/classifications, characteristics and organelles' individual and collective functions, cell interaction/communication and transports of materials across cell membranes. Methods and significance of cell divisions is also central to the understanding of the nature of cell behaviour in any living system.

B. *Course Objectives/Goals*
(i) Improve knowledge on the relevance of cell to the life of any living system.
(ii) Provide a vivid insight into the world of cells.
(iii) Understand how cell interactions drive metabolic processes in a living system.
(iv) Exposure to the various experimental methods of carry out cell based study/research.
(v) Using the mechanisms of cell divisions a tool to demystifying reproductive processes and abnormal cell growth.
(vi) Understand how different forms of useful materials enter and waste exit the cell.
(vii) Provoke and sharpen cell research interest in students.
(viii) Impacting conscious appreciation of nature.
(ix) Improve students understanding of cell and organelles' functions.
(x) Provide a knowledge base that directly or indirectly make students valid competitors in professional, industrial, scientific and academic endeavours.

C. *Method of Lecture Delivery/Teaching Aids*
Power point presentations especially in illustrative topics coupled with note dictations.

D. Course Outlines

(a) Module 1:

Week 1: Definition of cell biology, significance of cell biology, Techniques/methods use in cell biology e.g. microscopy; cell culture; immunostaining; gene knockdown; PCR; computational genomics; flow cytometry etc. Assignment 1.

Week 2: Definition of a cell, evolution/history of cell, type of cells i.e. plant cell and animal cell; prokaryotic and eukaryotic cells; unicells and multicells, comparison and contrast between type of cells.

Week 3: endosymbiotic theory, structure of typical prokaryote and eukaryote, cell organization. Assignment 2.

Week 4: Organelles e.g. endomembrane system (ER, Vacuoles, Vesicles, GB); chloroplast; nucleus; mitochondria etc and their respective functions. Assignment 3.

Week 5: Cell transport i.e. active and passive transport e.g. diffusion, osmosis, endo and exocytoses etc., significance of cell transport, revision.

Week 6: Alpha mid semester test (serves as test 1).

Week 7: Cell communication/interaction.

Week 8: Cell division e.g. mitosis and meiosis, test 2.

Note: Modules 1-4 is taken by the course co-ordinator and ***Modules 5-8*** by the teaching assistant.

E. Tutorials

To be provided only on students request.

F. Structure of Programme/Method of Grading

There shall be two form of tests administered to students of 20% and 10% scores respectively otherwise, the cumulative scores from students assignments shall constitute 10% (See D above).

The examination shall compose of multiple-choice, filling in the blanks, other cognitive and short-answer theory questions of 70% score. Total score at the end of the alpha semester shall be 100%.

G. Ground Rules and Regulations

(i). 75% class attendance and participation is required from students before he or she is qualified to write BLY112 examination.
(ii). No student shall be allowed in for this lecture 15minutes into the allotted time or entrance of the course teacher.
(iii). Class governors/reps shall assist course teachers in taking student attendance at each class session.
(iv). Any immodestly dressed persons or student who failed/refused to participate in question and answer class exercises shall be asked to vacate the class or any future classes until exculpated.
(v). Assignment that was not submitted and delivered to the course teacher with the stipulated time frame set shall not be graded.

(vi). Students shall be required to read beyond what is provided in class or compliment class jottings by making reference to textbooks for better grade standing.

H. Topics for Term Paper/Assignment

To be provided by the course teacher in the course of lectures.

I. Alignment with Goals and Vision of Landmark University

The proviso in the course content and ground rules connect with the University core values of responsibility, possibility mentality, capacity building and diligence. The subject of cell biology holistically is thought provoking and if well applied will raise a feedback of armies that will shock the world with impacting discoveries.

J. Contemporary Issues/Industrial Relevance

(i). The study and knowledge of cell evolution i.e. chemical evolution, spontaneous generation, new cells evolving from pre-existing ones, Individualistic creation by a supreme God etc. remained a controversial topic of debate all over the world and fundamental to discovering the origin of life.

(ii) Understanding the behaviour of cell during division has unlocked approach into cancer treatment research.

(iii). The share manipulation of cellular functions or metabolic process has revolutionised contemporary issues of global concern that bothers on food security, cloning, nano and stem cell technology etc.

K. Recommended Reading

Any general/cell biology book/internet search of relevant topics is acceptable and recommended.