LEAD CITY UNIVERSITY, IBADAN

Faculty of Sciences

Department of Microbiology/Biology

COURSE PARTICULARS

Course code: BIO 412
Course title: Developmental Biology
No. of Units: 2
Status: Required

LECTURER DETAILS

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COURSE DESCRIPTION

BIO 412 is a multidisciplinary field that entails research-driven knowledge and experience in a broad range of biological subjects, from the molecular functions of individual genes and proteins, to the structure and function of whole organs.

COURSE OBJECTIVES

The general objective is to enable the student to understand and appreciate some of the events and processes which occur during animal growth and development, as the animal develops from an egg and a sperm into an adult organism. Students should also come to understand how the process of differentiation leads to many different types of cells and tissues which function in an integrated way as each new organism develops

ASSESSMENT

Coursework and attendance	40marks
Final Examination	60marks

LECTURE PLAN

Weeks 1 & 2:	Introduction and Gametogenesis
Week 3:	Fertilization
Week 4:	Cleavage
Week 5:	Gastrulation
Week 6 & 7:	Neurulation and Nervous system
Week 8:	Cell differentiation
Week 9 & 10:	Chick development
Week 11 & 12:	Histogenesis
Week 13 & 14:	Regeneration
Week 15:	Revision

READING LIST

1) Biggs, A; Kapicka, C. and Lundgren. L.(1998): Biology: the dynamics of life. Published by the McGraw-Hill companies.
2) Kent, M.(2000): Advanced Biology . Published by the Oxford University press.

TUTORIAL QUESTIONS

1. (a) With the aid of a large well labelled diagram, describe the different stages of the cell cycle

   (b) Describe in brief, the different stages of Mitosis.

2. Describe in detail, the process of Meiosis and fertilization in *Ascaris lumbricoides*.

3. Outlie in detail, the process of spermatogenesis and Oogenesis.

4. (a) What do you understand by a mesolecithal Embryo?

   (b) Describe the process of gastrulation in a named amphibian.

5. With the aid of large labelled diagrams, describe the process that leads to the development of aortic arch in the chick embryo.

6. (a)What are Epithelia tissues?

   (b) Describe the different types of epithelial tissues you know.

7. (a) List the different types of muscle tissues you know.

(b) With the aid of large labelled diagrams, describe each in brief.

9. Describe in brief, the different types of connective tissues you know.

10. With the aid of large labeled diagrams, describe a typical nervous tissue.

11. If the body of Hydra is cut in half, the lower half will grow a new head while the upper half will grow a new foot, discuss.

12. Describe the process of regeneration in a named planarian.