



**DEPARTMENT OF LIFE SCIENCE &
BIOINFORMATICS**

ASSAM UNIVERSITY, SILCHAR

(A CENTRAL UNIVERSITY CONSTITUTED
UNDER ACT XIII OF 1989)

Silchar – 788 011, Assam, India

No. AU/LSc-MSc/2018/

Date: 11/12/2018

NOTICE

Department of Life Science & Bioinformatics will offer the following Open Choice paper for the CBCS Course for PG students of AUS

LS 203: Concepts in Biological Science (Open Choice Paper)

Intake Capacity: 50

(For Non Life Science & Bioinformatics students)

Prerequisite of the Course:

Passed Higher Secondary with at least 55% marks in Biology/Botany/Zoology

Any student interested to study the open paper in Life Science & Bioinformatics Department must apply to the HOD of the Department by filling up the enclosed form within December 31, 2018. Form without counter signature of Parent HOD, will not be accepted.

Note: The criteria for selection is first-come-first-serve basis subject to fulfillment of prerequisites of the paper

Selection list will be displayed by January 7, 2019 in the Departmental Notice Board and Website.

Sd/-

(Prof. Sanjib Kumar Panda)

Head

Copy for information to:

1. P.S. to Vice Chancellor for kind information of the Vice Chancellor, AUS.
2. Registrar, AUS for kind information.
3. Controller of Examinations, AUS for kind information.
4. Head, Department of _____, AUS.
5. Notice Board.
6. Office file.

Sd/-

(Prof. Sanjib Kumar Panda)

Head

**Department of Life Science
& Bioinformatics
Assam University : Silchar**

Open Course Application Form

- (a) Name of the Candidate: _____ (b) Semester: _____
- (c) Parent Department in which Enrolled: _____ (d) Gender: _____
- (e) Email id: _____ (f) Mobile: _____
- (g) Department to which applied for Open Course: **Life Science & Bioinformatics**
- (h) Open Paper opted : LS-203 Name of the Paper : **Concepts in Biological Science**
- (i) Details of the copy(s) of document(s) in favour of the prerequisites for the particular paper:
- a) _____
- b) _____
- (j) Percentage of marks in Biology/Botany/Zoology in Higher Secondary (up to 2-decimal point): _____

I do hereby declare that I passed Higher Secondary with at least 55% marks in biology.

(Signature by HOD of parent department)
Seal

(Signature of the Candidate)

Note:

1. Candidate shall provide copy of (i) Higher Secondary mark sheet and (ii) University identity card.
2. No application shall be entertained unless supporting documents as mentioned above are provided.
3. The list of selected candidates will be displayed on or before January 7, 2019 in the Departmental Notice and Website. Selected candidates need to inform the HoD, Department of Life Science & Bioinformatics in a plain paper expressing their interests in taking up the course by 9th January 2019, failing which the seat will be allotted to candidates from waiting list.

SEMESTER – II

LS 203: Concepts in Biological Science (Open Choice Paper)

[Full Marks = 100; 6 Contact hours/week; 1.2 credits/unit; Total credit = 06]

Unit – I: (Basic biology)

1. Origin of life, evolution of biomolecules.
2. Concepts of species and hierarchical taxa. Levels of organization of tissues, organs and systems
3. Diversity and basic classification of plants, animals and micro-organisms
4. Biological nomenclature and code

Unit – II: (Evolutionary thoughts)

1. Lamarckian concept of evolution: Lamarkism
2. Darwin's theory of evolution: concepts of variation, adaptation, struggle, fitness and natural selection
3. Elemental forces of evolution: mutations
4. Modern synthetic theory of evolution

Unit –III: (Developmental biology)

1. Gametogenesis: Spermatogenesis and oogenesis, Fertilization: Sperm egg interaction and acrosomal reaction
2. Fusion of gametes and egg activation. Cleavage: Types of eggs; overview of types of cleavage
3. Microsporogenesis and megasporogenesis
4. Development of male and female gametophytes; double fertilization, polyembryoni and apomixis

Unit –IV: (Physiology of life process)

1. Osmotic and water potential. Aquaporins; Translocation of mineral salts
2. Photosynthesis - Mechanisms of photophosphorylation in thylakoid membranes, CO₂ fixation; Photorespiration and its significance.
3. An overview of hemopoiesis and structure of hemoglobin
4. Gaseous exchange and transport in blood.

Unit –V: (Cell signaling)

1. Plant Signal transduction in relation to Sugar Signaling in Growth and Development
2. Plant stress and cell signaling; Senescence and programmed cell death (PCD) in Plants; Reactive Oxygen species (ROS) signaling in Plants
3. Hormone receptors
4. Mechanism of hormone action: Second messenger; mediated cell signaling

LS – 203: Suggested Readings:

1. The greatest show on earth by Richard dawkins
2. Organic evolution by Rastogi
3. Gilbert, S. F.. Developmental Biology (8th ed.), Sinaur Associates Inc., Sautherland.
4. Berrill, N.J. Developmental Biology, McGraw Hill Book Co., USA.
5. Taiz, L. and Zeiger E. (2010) Plant Physiology
6. Baluska F. and Mancuso, S. (2009) Signaling in Plants, Springer,
7. Leopod, A.C. and Kreidman, P.E. (1980). Plant Growth and Development.
8. Witherperson, J.D. (1984). Human Physiology, Harper and Row, USA.