DEPARTMENTOF LIFE SCIENCE & BIOINFORMATICS

**ASSAM UNIVERSITY, SILCHAR**

(A CENTRAL UNIVERSITYCONSTITUTED

UNDER ACT XIII OF 1989)

Silchar – 788 011, Assam,India

**No.**AU/LSc-MSc/2021/ Date:23/04/2021

# N O T I C E

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:62**

(For Non Life Science & Bioinformatics students)

**Prerequisite of the Course:**

Passed Higher Secondary and Degree course with at least 55% marks in 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 April30, 2021. 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 May 7, 2021 in the Departmental Notice Board and Website.**

23-04-2021 **Sd/-**
(Prof. Sarbani Giri)
Head

Copy for information to:

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

23-04-2021 **Sd/-**
(Prof. Sarbani Giri)
Head

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

## Open Course Application Form

(a) Name oftheCandidate:_____(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) and degree course__

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

(Signature by HOD of parent department) (Signature of the Candidate)

Seal

**Note:**

1. Candidate shall provide copy of (i) Higher Secondary mark sheet and (ii) Degree Mark sheet.
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 April 7, 2021in the Departmental Notice and Website. Selected candidates need to inform the HoD, Department of Life Science & Bioinformatics through email expressing their interests in taking up the course by 9$^{th}$ May 2021, 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 ofbiomolecules.
2. Concepts of species and hierarchical taxa. Levels of organization of tissues, organs andsystems
3. Diversity and basic classification of plants, animals andmicro-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 naturalselection
3. Elemental forces of evolution:mutations
4. Modern synthetic theory ofevolution

**Unit –III: (Developmental biology)**

1. Gametogenesis: Spermatogenesis and oogenesis, Fertilization: Sperm egg interaction and acrosomalreaction
2. Fusion of gametes and egg activation. Cleavage: Types of eggs; overview of types of cleavage
3. Microsporogenesis andmegasporogenesis
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 mineralsalts
2. Photosynthesis - Mechanisms of photophosphorylation in thylakoid membranes, CO2 fixation; Photorespiration and itssignificance.
3. An overview of hemopoiesis and structure ofhemoglobin
4. Gaseous exchange and transport inblood.

**Unit –V: (Cell signaling)**

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

**LS – 203: Suggested Readings:**


1. The greatest show on earth by Richarddawkins
2. Organic evolution byRastogi
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) PlantPhysiology
6. Baluska F. and Mancuso, S. (2009) Signaling in Plants,Springer,
7. Leopod, A.C. and Kreidman, P.E. (1980). Plant Growth andDevelopment.
8. Witherperson, J.D. (1984). Human Physiology, Harper and Row,USA.