

*Details of Courses of Study*

**SIDO-KANHU MURMU UNIVERSITY, DUMKA**

**TEACHING PLAN (SEMETER WISE) FOR CHOICE BASED  
CREDIT SYSTEM IN UNDERGRADUATE  
BOTANY PROGRAMME (ALLIED)**

**SEMESTER – I**

| <b>Paper</b>     | <b>Subject type</b> | <b>Topics</b>  | <b>Total marks</b> |
|------------------|---------------------|--|--------------------|
| <b>BOT 101A</b>  | <b>Core</b>         | <b>Microbiology &amp; Plant Pathology, Algae, Fungi, Bryophyta, Pteridophyta, Gymnosperm, Angiosperm, Anatomy and Embryology</b> | <b>75</b>          |
| <b>Practical</b> |                     | <b>Practical Based on Paper BOT 101A</b>   | <b>25</b>          |

**SEMESTER – II**

| <b>Paper</b>     | <b>Subject type</b> | <b>Topics</b>   | <b>Total marks</b> |
|------------------|---------------------|---|--------------------|
| <b>BOT 201A</b>  | <b>Core</b>         | <b>Cell Biology, Genetics, Physiology, Metabolism, Ecology, Environmental Biology and Economic Botany</b> | <b>75</b>          |
| <b>Practical</b> |                     | <b>Practical Based on Paper BOT 201A</b>  | <b>25</b>          |

**SEMESTER – I**

**BOT 101A – Microbiology & Plant Pathology, Algae, Fungi, Bryophyta, Pteridophyta, Gymnosperm, Angiosperm, Anatomy and Embryology**

**Full Marks- 75**

**Microbiology: Viruses-** General account; nature and structure of TMV.

**Bacteria-** Structure, reproduction and economic importance.

**Plant Pathology:** Elementary idea of Plant Pathology; Citrus Canker and Loose smut of wheat.

**Algae:** General characters, economic importance and life history of *Nostoc* & *Oedogonium*.

**Fungi:** General characters, economic importance and life history of *Phytophthora* and *Puccinia*.

**Bryophytes:** General characters and life cycle of *Marchentia* and *Polytrichum*.

**Pteridophytes:** General characters and life cycle of *Selaginella* and *Pteris*.

**Gymnosperm:** General account and life cycle of *Cycas* and *Pinus*.

**Angiosperm:** Binomial nomenclature, Classification-Bentham and Hooker & Hutchinson. Family description – Ranunculaceae, Apocynaceae, Lamiaceae, Euphorbiaceae and Poaceae.

**Anatomy:** Meristem and Secondary growth.

**Embryology:** Micro and Mega sporogenesis, Male and female gametophyte.

**Practical – (Based on Paper BOT 101A)**

**Full marks- 25**

**SEMESTER – II**

**BOT 201A – Cell Biology, Genetics, Physiology, Metabolism, Ecology,  
Environmental Biology and Economic Botany**

**Full Marks- 75**

**Cell Biology:** Plasma membrane, Chloroplast, Mitochondria, DNA, Mitosis, Meiosis.

**Genetics:** Mendel's law of inheritance, Interaction of gene- complimentary and supplementary gene.

**Physiology:** Diffusion, Osmosis, Absorption of water and Transpiration.

**Metabolism:** Photosynthesis; light reaction & Calvin cycle. Respiration- Glycolysis & Krebs cycle.

**Phytohormones:** Auxin and Gibberellins.

**Ecology:** Ecosystem- Aquatic and Forest, Adaption- Hydrophytes and Xerophytes.

**Environmental Biology:** Pollution; Air and Water. Strategies of conservation of Biodiversity- In-situ and Ex-situ.

**Economic Botany: Food Plant-** Wheat and Rice. **Pulses-** Arhar, Gram and Lenti. **Timber-** Teak, Mudhuca and Sal, **Medicinal Plant-** Kalmegh, Centella, Tulsi, Adhatoda and Ashwagandha.

**Practical – (Based on Paper BOT 201A)**

**Full marks- 25**