**KARIM CITY COLLEGE, JAMSHEDPUR**

**DEPARTMENT OF BOTANY**

**SYLLABUS DISTRIBUTION**

**AS PER FYUGP, NEP -2022**

**Paper Title – Major Paper 15 (MJ-15)**

**CREDIT-04 [THEORY- 03 + PRACTICAL- 01]**

**Plant Ecology**

**DR. AFTAB ALAM KHAN:**

**Course Outcomes**: -

On completion of this course, the students will be able to:

1. Understand core concepts of biotic and abiotic

2. Classify the soils on the basis of physical, chemical and biological components.

3. Evaluate energy sources of ecological system.

4. Assess the adaptation of plants in relation to light, temperature, water, wind and fire.

5. Conduct experiments using skills appropriate to subdivisions.

**Full Mark - 60 Time: - 3 Hrs.**

**Unit I: 15 lectures**

Introduction, soil and water Basic concepts; Levels of organization. Abiotic and

biotic Components and their interrelationships. Soil: Origin; Types and

Formation; Composition; Physical, Chemical and Biological components; Soil

profile. Types of soils in India. Water: States of water in the environment;

Precipitation types (rain, fog, snow, hail, dew); Hydrological Cycle.

**Unit II: 7 lectures**

Ecological adaptations, Population ecology Variations in adaptation of plants in

relation to light, temperature, water, wind and fire. Population ecology:

Characteristics and population growth, population regulation, life history

strategies; r and k selection. Ecological Speciation.

**DR.SHARMILA CHAKRABORTY:**

**Unit III: Ecosystem 15 lectures:**

Community characteristics: analytical and synthetic; Concept of ecological

amplitude; Habitat and niche; Eco tone and edge effect; Succession: processes,

types; climax concept. Primary vs Secondary succession. Ecosystem: Structure;

Processes; Trophic organization; Food chains and Food webs; Ecologic al pyramids.

Ecosystems of India.

**Unit IV: 8 lectures:**

Functional Aspects of Ecosystem Principles and models of energy flow; Production

and productivity; Ecological efficiencies; biogeochemical cycles of carbon, nitrogen

and phosphorus.