**KARIM CITY COLLEGE, JAMSHEDPUR**

**DEPARTMENT OF BOTANY**

**SYLLABUS DISTRIBUTION**

**AS PER FYUGP, NEP -2022**

**SEMESTER - VII Paper Title – Major Paper 16 (MJ-16)**

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

**Plant Breeding**

**DR.AFTAB ALAM KHAN:**

**Course Outcomes: -**

On completion of this course students will be able to:

1.Develop conceptual understanding of plant genetic resources, plant breeding gene bank and

Gene pool

2. Familiarize with genetic basis of heterocyst.

3. Classify Sexual and Asexual modes of reproduction.

4. Explain monogenic and polygenic inheritance

5. Reflect upon the role of various non- conventional methods used in crop improvement.

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

**Unit I: 10 lectures**

An Introduction to Plant Breeding Introduction and objectives of Plant Breeding,

Breeding systems: Modes of reproduction in crop plants. Self incompatibility,

male sterility and apomixes. Important achievements and undesirable

Consequences of plant breeding.

**Unit II: 15 lectures**

**Methods of Crop Improvement Introduction**: Centres of Origin and domestication

of crop plants, plant genetic resources; Acclimatization; Selection methods: For

Self-pollinated, cross pollinated and vegetative propagated plants;

Hybridization: For self, cross and vegetative propagated plants – Procedure,

Advantages and limitations.

**DR.SHARMILA CHAKRABORTY:**

**Unit III: 10 lectures**

Inbreeding Depression and heterocyst lectures History, genetic basis of

Inbreeding depression and Heterocyst: Applications.

**Unit IV: 10 lecture**

Crop improvement and breeding Role of mutations; Polyploidy; Distant

Hybridization, Molecular Breeding, role of biotechnology in crop improvement.