ALIGARH MUSLIM UNIVERSITY, ALIGARH

FACULTY OF AGRICULTURAL SCIENCES

SYLLABUS FOR

M.SC. (AGRICULTURE) ENTOMOLOGY / M.SC. (AGRICULTURE) PLANT PATHOLOGY AND M.SC. (AGRICULTURE) NEMATOLOGY

1. General awareness in Agriculture and related branches of life sciences/ biological sciences

2. M.SC. (AGRICULTURE) ENTOMOLOGY

Fundamentals of insect morphology, Insect ecology, Insect taxonomy and Biological control. Insecticides and their formulations. Insecticide appliances and their maintenance. Productive insects (silk moths, lac insects, honey bees etc), Economically important Insect pests of Rice, wheat, maize, sorghum, mustard, groundnut, pulses, sugarcane, cotton, mango, guava, citrus, apple, papaya, vegetables, ornamental plants etc and their management, Economically important Pests (insects, mites, micro-organisms and rodents) of stored grains and their management, Concept of Integrated Pest Management. Methods of insect collection and preservation.

3. M.SC. (AGRICULTURE) PLANT PATHOLOGY

History of Plant Pathology with particular reference to India. Major epidemics and social impacts of plant diseases; Characteristics of prokaryotic and eukaryotic organisms; General morphological characteristics and taxonomic position of fungi, bacteria, mycoplasmas, fastidious bacteria, viruses and viroids; Growth, reproduction, variability, survival and dispersal of plant pathogens; Koch's postulates; uses of microorganisms in agriculture; Symptomatology, etiology, disease cycle and management of rusts, smuts, powdery/downy mildews, wilts, blights, necrosis, yellows, mosaic, and witches- broom in important cereals, millets, pulses, oilseeds, fibre crops, vegetables, fruits, and plantation crops. Principles and methods of plant disease management - regulatory, cultural, physical, host resistance, biological and chemical methods; integrated diseases management.

4. M.SC. (AGRICULTURE) NEMATOLOGY

History and economic importance of plant-parasitic nematodes; Nematode parasitism; Fundamentals of nematode morphology, taxonomy, biology and ecology; Nematode interactions with micro-organisms; Entomopathogenic nematodes; Symptoms and disease cycle of important nematode diseases caused by *Meloidogyne, Heterodera, Pratylenchus, Ditylenchus, Radopholus, Aphelenchoides, Anguina, Bursaphelenchus, Rotylenchulus, Xiphinema* etc. Basic principles of nematode management - regulatory and quarantine, cultural, host resistance, biological and chemical methods; Isolation of nematode from soil and plant materials, and other basic nematological techniques.