Lecturer: **Prof. M. S. Ayodele**

Course: **BOT 422: Plant Population Ecology**

Synopsis: Demographic characteristics of natural populations and techniques of estimating the growth and regulation of population

Students who have taken this course in Plant Population Ecology should be able to do the following things namely:

- Distinguish between members of a community population;
- Appreciate the quantitative presence of each taxon available;
- Determine means of obtaining this quantitative values
- Explain the importance and interaction between the spatial structure, age structure, and size structure on the birth, death, immigration, and emigration rates within plant populations
- Design and conduct experiments to investigate current concepts in plant population ecology
- Discuss the current research literature on plant population ecology

1. Plant life cycle – Some basic issues: - Seed germination to plant growth and seed production. Dispersal, Dormancy and recruitment, Neighborhood effects and thinning, Herbivory and Reproduction

2. Fundamentals of Plant Population Ecology:
   - Relative magnitudes of effects of ecological and genetic factors in demographic changes in plant populations
   - Animal interactions (herbivory, pollination, seed dispersal) and their effects on demographic changes in populations and how it leads to differences between life history characteristics of populations
   - Alternative dormancy and dispersal characteristics – the effect on population dynamics Plant size distributions related to age distributions and how do these interact with localized spatial heterogeneity
   - The effect of plant defensive mechanisms on popualtion dynamics in the presence of predators/herbivores
3. Take-home Assignments: Enumerate and state appropriate definitions of terminologies related to plant population
4. Short-gun Quizzes (Unannounced)
5. Field work: Demonstrative Exercises on demographic estimates

Some Recommended Text Books

1. Silvertown, J., & D. Charlesworth. 2001. *Introduction to Plant Population Biology, 4th edition*. Blackwell Science.
2. Gibson, D.J. 2002. *Methods in Comparative Plant Population Ecology.* Oxford University Press.
3. Michael Begon, Martin Mortimer and David J. Thompson. Population ecology: a unified study of animals and plants
4. Harper, J.L. (1977). *Population Biology of Plants*. Academic Press, London.

Professor M. S. Ayodele Course Lecturer