**AGR-609 Environment and Crop Production 3(2-1)**

**THEORY**

Environment, climate change and food security. The aerial and soil environments. Macro and micro environments. Influence of different environmental factors; radiation, temperature, water, wind, CO2 and vapour pressure on crop growth processes such as photosynthesis, respiration and transpiration. Effect of drought on growth. Greenhouse effect on crop production, *El Nino and La Nino* phenomenon. Crop adaptation to changing climate.

**PRACTICALS**

Measurements and estimation of different environmental variables. Calculations of potential evapotranspiration and different drought indices. Measurement of solar radiation in crops.

**BOOKS RECOMMENDED**

1. Allaby, M. 2000. Basics of Environmental Science. Rutledge, London & New York.
2. Dris, R., J. Mohan and I.A. Khan. 2002. Environment andCrop Production. Science Pub. Inc., New York.
3. Fitter, A.H. and P.K.M. Hay. 1987. Environmental Physiology of Plants. 2nd Ed. Academic Press Inc. London.
4. Hammer, G.L., N. Nicholls and C. Mitchell. 2000 Application of Seasonal Climate Forecasting in Agricultural and Natural Ecosystems. Kluwer Academic Publisher, London.
5. Pearcy, R.W., J.R. Ehleringer, H.A. Mooney and P.W. Rundal. 1989. Plant Physiological Ecology: Field Methods and Instrumentation. Champman and Hall, London, New York.
6. Rowan Sewing, C., T.T. Richer, J.W. Jael. G.Y. Tsuji and Hi Ledyard. 1995 Climate Change Agriculture: Analysis of Potential international impact ASA Special Publication, USA.