

### AG411 Agricultural Structures and Environment Control

**Course Description & Objectives:**

To expose the students with design of agriculture structures with standard according BIS.

**Course Outcomes:**

The student will gain the knowledge of:

1. design of agriculture structures
2. the techniques to control temperature, humidity and other composition of air to create favorable environment in the agricultural structures.

**Unit I: Introduction to agricultural structure and environmental Control:**

Planning and layout of farmstead. Physiological reactions of livestock to solar radiation and other environmental factors, livestock production facilities,

**Unit II: Introduction to BIS standard for farm structure:**

BIS. Standards for dairy, piggery, poultry and other farm structures. Design, construction and cost estimation of farm structures; animal shelters, compost pit, fodder silo, fencing and implement sheds, barn for cows, buffalo, poultry, etc.

**Unit III: Rural development:**

Engineering for rural living and development, rural roads, farm fencing, their construction cost and repair and maintenance

**Unit IV: Introduction to solid waste management:**

Design of septic tank for small family. Solid waste management system

**Unit V: BOD and COD:**

BOD and COD of food plant waste, primary and secondary treatment of food plant waste.

**TEXT BOOKS:**

1. Goel, J. K. (2002). *Energy and Environment of Buildings & Farms*. Saroj Prakashan, Alahabad.
2. Jagadish Prasad. (1996). *Principles and Practices of Dairy Farm Management*. Kalyani Publishers, New Delhi.

**REFERENCES:**

1. Maton, A et al. (1986). *Housing of Animals Developments in Agrl.Engg.* Elsevier Science Publishing Co. Inc.
2. Michael and Ohja (2002). *Principles of Agricultural Engineering* (Vol.1). Jain Brothers, New Delhi.
3. Albright, L. D.(1996). *Environmental control for Animals and Plants.* ASAE, Michigan, USA.
4. Clark, J.A. (1980). *Environmental Aspects of Housing for Animal Production.* Butter worths, London.
5. [http://ecourses.iasri.res.in/e-Leaamingdownload3\\_new.aspx?Degree\\_Id=04](http://ecourses.iasri.res.in/e-Leaamingdownload3_new.aspx?Degree_Id=04)