



FARM MACHINERY

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PRE-REQUISITES : Students of 3rd yrs B.Tech./BE (Agricultural Engineering) or 4th yrs. B.Sc, Agricultural courses of Agricultural Universities!

INTENDED AUDIENCE : Agricultural Engineering

COURSE OUTLINE :

The course on Farm Machinery is designed for undergraduate students of Agricultural Engineering, Practicing Engineers, Machinery Manufacturers and Research Scientists. The contents comprises of basic principles and the use of modern technology, viz, Image Processing, Microcontrollers, Sensors and Embedded Systems. Design of horticultural machines and equipment are specially included considering the need of the hour. Suitable examples in the form of problems and their solutions are included for the students to get clarity about the various concepts discussed on each topic. Use of machines Custom hiring and mechanization of small farms are also discussed under each level of mechanization for the readership to appreciate the importance of the machines used.

ABOUT INSTRUCTOR :

Prof. V.K. Tewari, B.Tech.(Hons.), M.Tech. (FMP) and Ph.D(Engg.) has been in the IIT system as a student and faculty. He has been teaching Farm Machinery Design, Farm Power, Engineering Ergonomics, Precision Agriculture at UG/PG levels in IIT, Kharagpur for the last 35 yrs. He was IIT JEE Chairman (2003-2006) He has served as Head of the Agricultural & Food Engineering Department and Rural Development Centre IIT, Kharagpur. He is a long standing member of American Society of Agricultural and Biological Engineers, USA.

COURSE PLAN :

- Week 01 :** Importance of farm machines in the contest of enhance production, multiple cropping, labour scarcity etc.
- Week 02 :** Ploughing and first opening of the soil, the design and component details.
- Week 03 :** Machinery of seedbed preparation operation.
- Week 04 :** Equipment for sowing and planting and inter cultivation.
- Week 05 :** Variable Rate Fertilizer Applicator, Microprocessor Based Herbicide Applicator, Spraying etc.
- Week 06 :** Equipment for irrigation
- Week 07 :** Machinery for crop harvesting design and operation
- Week 08 :** Root crop harvesting machinery
- Week 09 :** Machinery for horticultural crops
- Week 10 :** Equipment for crop protection and disease control
- Week 11 :** Machinery for transport and material handling
- Week 12 :** Machinery for land drainage, reclamation and estate maintenance