

# FIELD OPERATION AND MAINTENANCE OF FARM MACHINES

ENAE 306

**Lecture** : 0  
**Tutorial** : 0  
**Practical** : 3

**Year** : III  
**Part** : I

## Course Objectives:

The objective of this practical-based course is to provide hands-on-skills to identify and differentiate various makes and models of tractors and farm implements, operate them efficiently in agricultural fields, and apply essential safety protocols during field operations. It also aims to equip students with the skills to perform routine inspections, adjustments, and periodic maintenance to ensure optimal performance, longevity, and safe use of farm machinery.

## Practical

**(45 hours)**

1. Familiarization with different make and models of 4 - wheeled farm tractors, starting and safety checks
2. Forward and reverse driving practice on farm tractors, selection of right combination of speed and gear
3. Tractor driving practice in serpentine and circuitous form and with two wheeled tractor trailers
4. Practicing on hitching and de-hitching of mounted; semi mounted and trailed type implements
5. Field operation and adjustments on tractor drawn mould board and disc plough
6. Field operation and adjustments on tractor drawn mould board and disc harrow and cultivators
7. Field operation and adjustments on seed drill and planting machines
8. Field operation and adjustments on harvesting machines
9. Field operation and adjustments on threshing machine
10. Driving practice on two-wheeled tractor (Power tiller and mini tiller)
11. Hitching and de-hitching of power tiller driven farm machines
12. Maintenance and servicing of tractor after 10 hours and 50 hours of operations
13. Maintenance and servicing of tractor after 100 hours and 250 hours of operations
14. Maintenance and servicing of tractor after 500 hours and 1000 hours of operations
15. Adjustment of tractor wheel track

## References

1. Operator's Manuals of Farm Tractors Supplied by Different Manufacturers
2. American Association for Agricultural Engineering, Vocational Agriculture. (1968). Farm tractor tune-up and service guide (Latest Edition). Agricultural Engineering Center.
3. American Association for Agricultural Engineering, Vocational Agriculture. (1970). Tractor maintenance: Principles and procedures (Latest Edition). Agricultural Engineering Center.
4. Peterev, S., Bisnovaty, S. Repair of farm machinery. MIR Publishers.