CORE CONCEPT

Agricultural Mechanisation and Farm Machinery Fleet Management Course

18 – 22 October 2026
Riyadh - KAFD district five-star

Agricultural Mechanisation and Farm Machinery Fleet Management Course

Ref: 1986_29385 **Date:** 18 – 22 October 2026 **Location:** Riyadh - KAFD district five-star **Fees:** 20000 SAR

Introduction:

Agricultural mechanisation and farm machinery fleet management is a 1-week course for large-farm operations, agricultural investment and machinery-hire staff, ending with a Machinery Fleet Plan for a case farm or hire service. Farms lose yield and money when tractors are mismatched to implements, sowing windows are missed for lack of field capacity, breakdowns peak at harvest and ageing machines stay in service after repair costs overtake their value. Nominees already run or fund field operations and learn through a modelling build on case fleet and cost records. CoreConcept Training Center delivers this agricultural mechanisation course.

Course Objectives:

- Assess the mechanisation level, utilisation and condition of a farm machinery fleet against the cropping calendar and peak field workloads
- Match tractors to implements by power rating, ballast, three-point linkage category and power take-off type
- Calculate effective field capacity and the number of machines needed to finish each field operation within its timeliness window
- Estimate ownership and operating costs per hour and per hectare, including accumulated repair costs, for each machine class
- Organise a preventive maintenance and farm workshop routine that lowers in-season breakdowns and controls operator safety hazards
- Decide replacement age and choose between owning, leasing, hiring in or running a custom-hiring service using equivalent annual cost

Target Audience:

- Managers responsible for field operations, tractor fleets and seasonal machinery scheduling on large crop farms
- Investment staff responsible for appraising and monitoring machinery spending in agricultural companies and holdings
- Managers responsible for running machinery-hire, contractor or custom-hiring services for farmers
- Workshop and maintenance managers responsible for tractor, harvester and implement upkeep and spare parts
- Agricultural development staff responsible for mechanisation projects and farmer service centres

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Course Outline:

Day 1: Mechanisation Foundations and Fleet Current-State Assessment

- Mechanisation Levels From Hand Tools to Motorised Power
- Machine Families for Tillage, Seeding, Spraying and Harvesting
- Timeliness Cost and Labour Release as Mechanisation Drivers
- Fleet Register of Tractors, Implements, Hours and Condition
- Current-State Fleet Audit Using Utilisation and Downtime Records

Day 2: Tractor Power, Implement Matching and Field Capacity Standards

- Engine, PTO and Drawbar Power Ratings Compared
- Tractive Efficiency, Wheel Slip and Ballast Setting Method
- ISO 730 Three-Point Linkage Categories for Hitch Matching
- ISO 500 Power Take-Off Types, Speeds and Shielding
- Effective Field Capacity Formula Using Speed, Width and Efficiency

Day 3: Machinery Costing, Maintenance Programmes and Workshop Operations

- Ownership Cost Build of Depreciation, Interest, Housing and Insurance
- Operating Cost per Hectare From Fuel, Lubricants and Labour
- Accumulated Repair Cost Curves From ASABE Machinery Management Data
- Preventive Maintenance Schedule by Engine Hours and Season
- Farm Workshop Layout, Spare Parts Stock and Job Cards

Day 4: Replacement Economics, Operator Safety and Machinery Hire Models

- Equivalent Annual Cost Method for Optimum Replacement Age
- Buy, Lease or Hire Comparison for Seasonal Machines
- Rollover Protective Structures, Seat Belts and Road Transport Checks
- PTO Entanglement, Hitching and Overturn Incident Case Reviews
- Custom Hiring Centres, Machinery Rings and Contractor Hectare Pricing

Day 5: Modelling Build of the Machinery Fleet Plan

- Case Farm Cropping Calendar and Field Operation Workload Sheet
- Tractor and Implement Sizing Sheet for Peak Season Windows
- Fleet Cost per Hectare and Replacement Schedule Model
- Hire Service Rate Card and Utilisation Break-Even Test
- Machinery Fleet Plan Completion and Operations Panel Defence

Skills You Will Gain:

- Fleet Utilisation Analysis
- Tractor and Implement Matching
- Field Capacity Calculation
- Machinery Cost Estimation
- Preventive Maintenance Planning
- Workshop and Spare Parts Control
- Machinery Replacement Analysis
- Hire Service Pricing

Why Attend This Course:

- Deliver a Machinery Fleet Plan to the farm or hire-service director, the workshop lead and the finance manager as the basis for the next machinery budget
- Decide whether a tractor or harvester should be kept, replaced, leased or hired in, using cost per hectare and equivalent annual cost
- Avoid missed sowing and harvest windows, oversized purchases and PTO or overturn injuries caused by unplanned fleets
- Share field capacity sheets, maintenance schedules and hire rate cards with operations, workshop and finance colleagues

Conclusion:

Back at work, the participant hands the Machinery Fleet Plan to the farm or hire-service director, the workshop lead and the finance manager. They use it to approve tractor and implement purchases, set preventive maintenance intervals, decide which machines to replace, lease or hire in, and price hire work per hectare. After the first full cropping season, the unit should compare actual field capacity, downtime and cost per hectare with the plan, then revise the replacement schedule and hire rates where the gaps are largest.

Frequently Asked Questions FAQ:

What should participants know before an agricultural mechanisation and farm machinery fleet management course?

Participants should already supervise, fund or service field machinery and be comfortable with basic spreadsheets. Bringing an anonymised fleet list, engine hour records or a cropping calendar helps them apply the field capacity and cost models to their own operation.

How does agricultural mechanisation and farm machinery fleet management differ from a precision farming course?

It manages the machines as costed assets: power matching, field capacity, maintenance, replacement and hire. Precision farming courses focus on sensors, imagery, guidance data and variable-rate prescriptions, which appear here only as features to weigh when choosing equipment.

Why does farm machinery fleet management start from field capacity rather than tractor horsepower?

The hectares that must be finished within each sowing or harvest window set the work rate the fleet must deliver. Choosing horsepower first leads to tractors that are oversized for their implements or fleets that cannot meet peak workloads.

What do participants take back from the agricultural mechanisation and farm machinery fleet management course?

Participants take back a Machinery Fleet Plan for a case farm or hire service, with a workload sheet, tractor and implement sizing sheet, cost per hectare model, replacement schedule and hire rate card they can adapt.