



Tertiary and Vocational Education Commission

**National Competency Standards and Curriculum
For
Combine Harvester Operator
NVQ Level 3**

Course synopsis

Combine Harvester Operator is responsible for safe operation and routine maintenance of harvesting machine. This course covers the competencies required to operate the combine harvester machine for day's work by following pre-start procedures, harvesting procedure, machine shut down procedure and carrying out routing maintenance of the harvesting machine to keep it operational during critical harvest time.

Course Title	Course Duration
Combine Harvester Operator – NVQ Level 3	2 months (2weeks Institutional +6 weeks field operation)
<p>Job outlook, objectives of the course and career paths available following completion of the course</p> <p>The combine harvester is a machine that harvests grain crops. This machine comprises of three separate functions reaping, threshing, and winnowing into a single process. It is one of the most economically important labour saving machine and widely used in the agriculture fields.</p> <p>Combine Harvester Operator is responsible for safe operation and day-to-day maintenance of harvesting machine.</p> <p>In Sri Lanka over 10,000 harvesters are been used and every year 1000 new harvesters are been added with new technologies and farmers are looking for minimizing their crop losses due to wrong operations by untrained operators using these machines.</p> <p>A skilled Combine harvester operator can earn 15,000 rupees per day during the season. These operators can also find jobs as demonstrators, trainers, sales personnel, technicians.</p> <p>The main working areas of these operators are Anuradhapura, Kurunagala, Mannar, Kilinochhie, Batticalo, Trinco, Ampara, Habantota.</p> <p>The job calls for long hours of work during the season.</p> <p>Globally there are jobs in Australia and in Europe for these jobs.</p>	

Competence-based modules to be covered:

1. Perform pre operational checks

This unit covers the competencies required to check engine and other components of harvesting machine before start day's work as for manufacturer recommendations.

2. Attend to safety procedures

This module covers the competencies required to follow safety procedures when using combine harvester to avoid accidents.

3. Identify field conditions

This module covers the competencies required to assess field, environment and crop condition to minimize grain loss before start the harvesting process

4. Operate harvester machine

This module covers the competencies required to operate the combine harvester with maximum efficiency and optimum fuel consumption during the harvesting process

5. Perform loading, unloading and transport of combine harvester

This module covers the competencies required safe handling of combine harvester when moving machine from one place to another place by using a carrier

6. Perform routine maintenance

This module covers the competencies required to perform preventive maintenance to minimize break downs and to achieve maximum machine efficiency

7. Career Skills 1

All recent studies make it clear that one of the greatest problems noted with regard to the employability of students in the TVET sector is the absence of soft skills, in particular communicative competence in English. Employers have indicated that they would appreciate better English in their staff and the ability to communicate with more confidence. This module is designed to fill that gap and is required for all NVQ Level 3 courses.

Module Title	Course Duration
1. Perform pre operational checks	
Objectives of the module; This module covers the competencies required to check engine and other components of harvesting machine before start day's work.	
<p>Competencies to be covered:</p> <ol style="list-style-type: none"> 1. Carry out walk around inspection 2. Check and refuel the machine 3. Check track belts, travelling motor and travelling system 4. Check air cleaner 5. Check engine oil level 6. Check gear oil level 7. Apply grease and oil to the greasing point 8. Check hydraulic oil level 9. Check coolant level and radiator cap valve 10. Check the radiator fins for blockages 11. Check oil cooler fins 12. Check hoses and pipes (radiator and hydraulic) 13. Check the functions of lights 14. Check the function of indicator lamps, gauges, alarm and buzzers 15. Adjust seat visibility, height and legs and mirrors 16. Check the terminals and electrolyte level of the battery 17. Check drive belts and chains 18. Check screens for plugging 19. Check unusual loosen parts 20. Maintain pre check-up list 21. Check conveyer parts 22. Check reaper parts for loosen or damage 23. Check the thresher parts 24. Check cleaning sieves / blowers / fans 25. Check augers and tanks 26. Check water separator 27. Check the breather 28. Carry out machine start and shut down procedure 	
Recommended teaching methods :	Simulation, real work situation, demonstration, guided practice

Module Title	Course Duration
2. Attend to safety procedures	
<p>Objectives of the module: This module covers the competencies required to follow safety procedures when using combine harvester to avoid accidents.</p>	
<p>Competencies to be covered:</p> <ol style="list-style-type: none"> 1. Follow safety signs and symbols 2. Follow safety procedures when inspecting and using 3. Use Personal Protective Equipment (PPE) 4. Follow harvester parking procedures 5. Follow safety measures during loading, unloading and transporting 	
Recommended teaching methods :	Simulation, real work situation, demonstration, guided practice

Module Title	Course Duration
3. Identify field conditions	
Objectives of the module	
This module covers the competencies required to assess field, environment and crop condition to minimize grain loss before start the harvesting process	
Competencies to be covered:	
<ol style="list-style-type: none"> 1. Carry out visual inspection of the field (for debris and) 2. Check farm condition such as dry field or wet field 3. Check the safety requirement of the field 4. Check the type of soil and hardness of the field surface 5. Collect field information from relevant sources 6. Inspect the grain crop and its variety 7. Check for lodging 8. Check the condition of the crop (fully or half ripe / dry or wet) 	
Recommended teaching methods :	Simulation, real work situation, demonstration, guided practice

Module Title	Course Duration
4. Operate harvest machine	
Objectives of the module	
This module covers the competencies required to operate the combine harvester with maximum efficiency and optimum fuel consumption during the harvesting process	
Competencies to be covered:	
<ol style="list-style-type: none"> 1. Turn on the machine and check indicators and gauges 2. Drive harvesting machine to reap the crop 3. Set the speed of the thrasher drum and harvesting machine 4. Maintain records 5. Harvest crops in specific patterns 	
Recommended teaching methods :	Simulation, real work situation, demonstration, guided practice

Module Title	Course Duration
5. Perform loading, unloading and transport of combine harvester	
<p>Objectives of the module This module covers the competencies required safe handling of combine harvester when moving machine from one place to another place by using a carrier</p>	
<p>Competencies to be covered:</p> <ol style="list-style-type: none"> 1. Check the suitability of the carrier for loading 2. Follow recommended loading procedures 3. Follow recommended safety transporting and unloading procedures 4. Follow recommended loading unloading procedures 	
Recommended teaching methods :	Simulation, real work situation, demonstration, guided practice

Module Title	Course Duration
6. Perform preventive maintenance	
<p>Objectives of the module; This unit covers the competencies required to perform preventive maintenance to minimize break downs and to achieve maximum machine efficiency</p>	
<ol style="list-style-type: none"> 1. Carry out machine pre start and shut down procedure 2. Check and replace cutting components 3. Check and replace crop lifter components 4. Check and replace feeder house components 5. Check and replace engine and related components 6. Check and replace straw walker and sieve area 7. Check and replace grain elevator 8. Check and replace straw chopper components 9. Check and replace chains and belts 10. Maintain maintenance records 	
Recommended teaching methods :	Role plays, simulation, real work situation, demonstration, guided practice

Module Title	Course Duration
Career Skills 1	At least 60 hours in any 3 month course
<p>Objectives of the course</p> <p>All recent studies make it clear that one of the greatest problems noted with regard to the employability of students in the TVET sector is the absence of soft skills, in particular communicative competence in English. Employers have indicated that they would appreciate better English in their staff and the ability to communicate with more confidence.</p> <p>This course is designed to fill that gap and is required for all NVQ Level 3 courses.</p>	
<p>Competencies</p> <p>a Understand and use simple expressions to communication This subject provides the necessary communication skills so that students can introduce themselves and interact with others, and can respond to simple questions and follow simple instructions, describe people, places, and tools.</p> <p>b Read and write effectively This subject provides the necessary skills to find and understand the information given in a text, to understand notices, instructions and information, to take down short messages and write simple descriptions.</p> <p>c. Use English correctly This subject is not taught separately but is included in the development of the productive and receptive skills above, since awareness of the structure of the language is necessary for these The development of appropriate vocabulary is also targeted to deploy the above skills</p> <p>d. Develop the capacity to think and plan productively y This subject develops cognitive abilities and skills with regard to effective work, with strengthening of thinking skills, recognition of systems, making deductions etc</p> <p>e. Develop effective working capacity This subject develops the capacity to work effectively individually and in collaboration with others through building the sense of individual responsibility, and accountability within a working group</p>	