



## **Model Curriculum**

### **Tractor Operator**

SECTOR: AGRICULTURE & ALLIED SUB-SECTOR: AGRICULTURE CROP PRODUCTION OCCUPATION: FARM MACHINERY AND EQUIPMENT OPERATION AND MAINTENANCE REF ID: AGR/Q1101, v1.0 NSQF LEVEL: 4











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# **Tractor Operator**

CURRICULUM / SYLLABUS

This program is aimed at training candidates for the job of a "<u>Tractor Operator</u>", in the "<u>Agriculture & Allied</u>" Sector/Industry and aims at building the following key competencies amongst the learner

Program Name	Tractor Operator		
Qualification Pack Name & Reference ID. ID	AGR/Q1101, v1.0		
Version No.	1.0	Version Update Date	
Pre-requisites to Training	10 <sup>th</sup> Standard Pass, Preferably		
Training Outcomes	<ul> <li>Identify/famil selection and ploughing, lan harvesting etc</li> <li>Handle routin Tractor and se</li> <li>Care and main carry out mino Practice healt</li> </ul>	<ul> <li>After completing this programme, participants will be able to:         <ul> <li>Identify/familiarize with tools and equipments: Identification, selection and use of tools and equipments for various operations like ploughing, land levelling, sowing, intercultural operations, harvesting etc</li> </ul> </li> </ul>	





This course encompasses  $\underline{3}$  out of  $\underline{3}$  National Occupational Standards (NOS) of "Tractor Operator" Qualification Pack issued by "Agriculture Skill Council of India".

Sr. No.	Module	Key Learning Outcomes	Equipment Required
1	Introduction Theory Duration (hh:mm) 3:00 Practical Duration (hh:mm) 2:00 Corresponding NOS Code	<ul> <li>Understand General Discipline in the class room (Do's &amp; Don'ts)</li> <li>Understand Role of a Tractor Operator</li> <li>Learn Basic skills of communication</li> <li>Learn Basic reading capabilities to enable reading of signs, notices and/or cautions at site.</li> </ul>	Laptop, white board, marker, projector
2	Introduction to Tractors Theory Duration (hh:mm) 30:00 Practical Duration (hh:mm) 15:00 Corresponding NOS Code	<ul> <li>Understand the use of Tractors in Agriculture</li> <li>Familiarize with Tractor Parts and activities related to tractor operator</li> <li>Get acquainted with the nomenclature of different parts of Tractor</li> <li>Understand Working procedure and difference between two/four stroke petrol/diesel engine</li> <li>Understand Lubrication system and its types</li> <li>Familiarize with Cooling system and types</li> <li>Gain knowledge about Fuel supply layout of petrol/diesel engine</li> <li>Learn Introduction to clutch, gear box, differential power converter and power take off</li> <li>Familiarize Tyre size and rotation</li> <li>Familiarize General tyre defects</li> <li>Calculate the cost of Operation and Hiring charges</li> </ul>	Laptop, white board, marker, projector, tractor, trolly, implements
3	Operation of the Tractor Theory Duration (hh:mm) 25:00 Practical Duration (hh:mm) 50:00 Corresponding NOS Code AGR/N1101	<ul> <li>Perform daily checks</li> <li>Check replenish/top up lubricating oil, brake fluid, engine coolant, battery electrolyte transmission/hydraulic oil</li> <li>Adjust clutch &amp; brake paddle</li> <li>Understand the Ballasting process and its importance</li> <li>Operate PC &amp; DC levers as per the need</li> <li>Proper Gear and RPM selection</li> <li>Select proper implement and trailerfor a specific function</li> <li>Land preparation requirement and do the land opening</li> <li>Adjusting Tractor Implements- hitching &amp;</li> </ul>	Laptop, white board, marker, projector, tractor, trolly, implements





Sr. No.	Module	Key Learning Outcomes	Equipment Required
		<ul> <li>unhitching, lateral &amp; horizontal adjustments</li> <li>Operate the Tractor with and without implement</li> <li>Follow Rules for Tractor driving</li> </ul>	
4	Tractor Maintenance Theory Duration (hh:mm) 20:00 Practical Duration (hh:mm) 35:00 Corresponding NOS Code AGR/N1102	<ul> <li>Check and maintain fluids regularly/ lubrication points</li> <li>Ensure right tyre pressure</li> <li>Check belts and hoses</li> <li>Brake and clutch adjustment</li> <li>Check working of all the electrical systems and gauges</li> <li>Avoid overloading</li> <li>Attachment and detachment of Implements</li> <li>Clean/replace air cleaner filter, oil filter and fuel filters</li> <li>Apply grease to parts through nipple</li> <li>Clean check electrical system in petrol engine and adjust spark plug</li> <li>Charging of battery</li> <li>Care and maintenance</li> </ul>	Laptop, white board, marker, projector, tractor, washing unit, filer, wrench
5	Maintain Health & Safety at the work place Theory Duration (hh:mm) 10:00 Practical Duration (hh:mm) 10:00 Corresponding NOS Code AGR/N9903	<ul> <li>Maintain a clean &amp; efficient workplace</li> <li>Render appropriate emergency procedures</li> <li>Reporting time to time to appropriate person.</li> <li>Practice General safety and first aid</li> </ul>	Laptop, white board, marker, projector, safety shoes, goggles, first aid box, fire extinguisher
	Total Duration: Theory Duration (hh:mm) 88:00 Practical Duration (hh:mm) 112:00	Unique Equipment Required: Laptop, white board, marker, projector, tractor hydraulic jack, grease pump/gun, oil can, tyre balancer, spanner set, washing unit, s extinguisher, first aid box	pressure gauze, wheel





### Grand Total Course Duration: 200 Hours, 0 Minutes

(This syllabus/ curriculum has been approved by <u>Agriculture Skill Council of India)</u>





### Trainer Prerequisites for Job role: <u>"Tractor Operator" mapped to Qualification Pack:</u> <u>"AGR/Q1101, v1.0"</u>

Sr. No.	Area	Details
1	Description	Trainer is responsible for educating the trainees - basic repairs wherever feasible and is necessary and various agriculture activities as per the need.
2	Personal Attributes	Trainer should be Subject Matter Expert. He/ she should have leadership skills, good communication skills, observation skills
3	Minimum Educational Qualifications	Diploma
4a	Domain Certification	Certified for Job Role: " <u>Tractor Operator</u> " mapped to QP: <u>"AGR/Q1101, v1.0"</u> . Minimum accepted score is 80%.
4b	Platform Certification	Certified for the Job Role: "Trainer", mapped to the Qualification Pack: "MEP/Q0102". Minimum accepted score is 80%
5	Experience	<ul> <li>M Tech (Mechanical / Agriculture engineering)</li> <li>B Tech (Mechanical / Agriculture engineering)</li> <li>B Sc Agriculture with 1 year of relevant work experience and 2 years of total work experience</li> <li>Diploma with 3 years of relevant work experience</li> <li>Any Certificate course in Driver &amp; Tractor Operator Training with 5 years of relevant work experience</li> <li>Graduate with 3 years of relevant work experience</li> </ul>





#### Annexure: Assessment Criteria

Assessment Criteria	
Job Role	Tractor Operator
Qualification Pack	AGR/Q1101, v1.0
Sector Skill Council	Agriculture

Sr.	Guidelines for Assessment
No.	
1	Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2	The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3	Assessment will be conducted for all compulsory NOS, and where applicable, on the selected elective/option NOS/set of NOS
4	Individual assessment agencies will create unique question papers for theory part for each candidate at each examination/training center (as per assessment criteria below).
4	Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criterion.
5	To pass the Qualification Pack , every trainee should score a minimum of 70% of aggregate marks to successfully clear the assessment.
6	In case of <i>unsuccessful completion</i> , the trainee may seek reassessment on the Qualification Pack.







<b>A</b>		Total	0.1	Marks Allocation		
Assessment outcomes	Assessment Criteria for outcomes	Marks (300)	Out Of	Theory	Skills Practical	
1.AGR/N1101	PC1. Lubricate rear axle bearing		5	2	3	
Operation of the	PC2. Check engine oil level		4	2	2	
tractor	PC3. Check coolant level		4	2	2	
	PC4. Drain water and sediment from fuel filter		4	2	2	
	PC5. Lubricate tie rod ends		5	2	3	
	PC6. Lubricate Steering spindles		5	3	2	
	PC7. Lubricate front axle pivot pin		5	3	2	
	PC8. Use of ballasting as per the need		5	3	2	
	PC9. Operate PC & DC levers as per the need		5	3	2	
	PC10. Do proper gear & RPM selection		5	2	3	
	PC11. Classify tillage implements into Primary tillage implements, Secondary Tillage implements, levelling equipment and trailer		4	2	2	
	PC12. Select proper implement for a specific function		4	2	2	
	PC13.Take precautions before using Implements and Trailer		5	2	3	
	PC14.Select and suggest the implements as per the need of the farmer		5	3	2	
	PC15. Take up the following function:			0	0	
	·Reducing ped size		4	2	2	
	·Weed control		4	2	2	
	Incorporation of fertilizers		4	2	2	
	·Puddling		4	2	2	
	·Leveling soil surface		3	1	2	
	·wheel track adjustment		4	2	2	
	· Do sway chain adjustment		4	2	2	
	·Position and adjust the Centre link		4	2	2	
	·Measure wheel slippage		4	2	2	
	PC1Do Lateral & horizontal adjustments of Implements		10	5	5	
	PC2Do Hitching and unhitching the implement from tractor	120	10	5	5	
		120	120	60	60	
2.AGR/N1102	PC1. Follow intervals for routine maintenance		120	5	5	
Tractor Maintenance	PC2. Lubricate different parts of the tractor		10	5	5	
	PC3. Follow basic operating instructions		10	5	5	
	PC4.Procure maintenance tools that are certified for such operations from a recognized body.		5	2	3	
	PC5. Check the engine oil		5	2		
	PC6. Check the transmission fluid/ hydraulic oil	120	5	2	3	
		120	С		5	







	PC7. Check the coolant in the radiator/ reservoir tank		10	5	5
	PC8. Ensure all the tyres have the right inflation		10	J	
	pressure as per the usage of the tractor		5	2	3
	PC9. If fittings or connections are leaking, tighten		-		
	them or replace the seals.		10	5	5
	PC10. Ensure proper adjustment of the brake and				
	clutch, and make sure the brakes and clutches				
	free play are adjusted properly		10	5	5
	PC11. Ensure that brake paddle latch should be				
	engaged while driving on road.		10	5	5
	PC12. Always ensure the right temperature, oil			_	_
	pressure and hour meter		10	5	5
	PC13. Ensure working of headlights, brake lights and horns.		5	2	3
	PC14. Always use a recommended load as	·	5	2	5
	suggested by the manufacturer.		5	5	0
	PC15. Attachment and detachment of				0
	Implements		10	5	5
			120	60	60
	PC1.Undertake basic safety checks before		120	00	
	operation of all machinery and vehicles and				
	hazards are reported to the appropriate				
	supervisor		2	1	1
	PC2.work for which protective clothing or				
	equipment is required is identified and the				
	appropriate protective clothing or equipment is used in performing these duties in accordance				
	with workplace policy.		2	1	1
	PC3.Read and understand the hazards of use and		2		
	contamination mentioned on the labels of				
	pesticides/fumigants etc		5	2	3
	PC4.Assess risks prior to performing manual				
	handling jobs, and work according to currently				
	recommended safe practice.		5	3	2
	PC5.Use equipment and materials safely and correctly and return the same to designated				
	storage when not in use		5	2	3
	PC6.Dispose of waste safely and correctly in a			2	5
	designated area		2	1	1
	PC7.Recognise risks to bystanders and take action				
	to reduce risk associated with jobs in the				
	workplace		5	3	2
	PC8.Perform your work in a manner which				
	minimizes environmental damage all procedures				
	and work instructions for controlling risk are		_	1	4
3.AGR/N9903	followed closely. PC9.Report any accidents, incidents or problems		2	1	1
3.AGR/N9903 Maintain health &	without delay to an appropriate person and take				
mannann nearth a	menous delay to an appropriate person and take				
Safety at the	necessary immediate action to reduce further				







	rres for dealing with emergencies, including ion and directions to		5	2	3
PC11.Follow emergenc standard / workplace re	y procedures to company equirements		5	2	3
	equipment in accordance ecifications and workplace		5	3	2
PC13.Provide treatme patient's injuries in acc first aid techniques	nt appropriate to the cordance with recognized		5	3	2
	tical), clean, inspect/test, nd store the first aid ate		6	3	3
· · · · · · · · · · · · · · · · ·	first aid administered in		4	2	2
			60	30	30
Total		300	300	150	150
				<u>50%</u>	<u>50%</u>
Percentage Weighta	ige:				
Minimum Pass% to qualify (	aggregate):			7	<u>0%</u>