

Government of Pakistan
National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"



Course Contents / Lesson Plan

Course Title: Tractor Driver and Mechanic

Duration: 6 Months

Revised Edition

Trainer Name	
Course Title	Tractor Driver and Mechanic
Objectives and Expectations	<p>Employable skills and hands-on practice for Tractor Driver and Mechanic</p> <p>This course offers a broad, cross-disciplinary learning experience for students looking to pursue career in being a Farm Tractor Driver and Mechanic especially in Agriculture business. Pakistan is an agricultural country and Tractor is one of the main farm mechanization machines which are in widely used throughout the country.</p> <p>This course aims at training the manpower that could operate, maintain and overhaul tractor efficiently with safety for various agricultural requirements.</p> <p><u>Main Expectations:</u></p> <p>In short, the course under reference should be delivered by professional instructors in such a robust hands-on manner that the trainees are comfortably able to employ their skills for earning money (through wage/self-employment) at its conclusion.</p> <p>This course thus clearly goes beyond the domain of the traditional training practices in vogue and underscores an expectation that a market-centric approach will be adopted as the main driving force while delivering it. The instructors should therefore be experienced enough to be able to identify the training needs for the possible market roles available out there. Moreover, they should also know the strengths and weaknesses of each trainee to prepare them for such market roles during/after the training.</p> <ol style="list-style-type: none"> i. Specially designed practical tasks to be performed by the trainees have been included in the Annexure-I to this document. The record of all tasks performed individually or in groups must be preserved by the management of the training Institute clearly labeling name, trade, session, etc so that these are ready to be physically inspected/verified through monitoring visits from time to time. The weekly distribution of tasks has also been indicated in the weekly lesson plan given in this document. ii. To materialize the main expectations, a special module on <u>Job Search & Entrepreneurial Skills</u> has been included in the latter part of this course (5th & 6th month) through which, the trainees will be made aware of the Job search techniques in the local as well as international job markets (Gulf countries). Awareness around the visa process and immigration laws of the most favored labor destination countries also form a part of this module. Moreover, the trainees would also be encouraged to venture into self-employment and exposed to the main requirements in this regard. It is also expected that a sense of civic duties/roles and responsibilities will also be inculcated in the trainees to make them responsible citizens of the country. iii. A module on Work Place Ethics has also been included to highlight the importance of good and positive behavior in the workplace in the line with the best practices elsewhere in the world. An outline of such

qualities has been given in the Appendix to this document. Its importance should be conveyed in a format that is attractive and interesting for the trainees such as through PPT slides +short video documentaries. Needless to say that if the training provider puts his heart and soul into these otherwise non-technical components, the image of the Pakistani workforce would undergo a positive transformation in the local as well as international job markets.

To maintain interest and motivation of the trainees throughout the course, modern techniques such as:

- Motivational Lectures
- Success Stories
- Case Studies

These techniques would be employed as an additional training tool wherever possible (these are explained in the subsequent section on Training Methodology).

Lastly, evaluation of the competencies acquired by the trainees will be done objectively at various stages of the training and a proper record of the same will be maintained. Suffice to say that for such evaluations, practical tasks would be designed by the training providers to gauge the problem-solving abilities of the trainees.

(i) Motivational Lectures

The proposed methodology for the training under reference employs motivation as a tool. Hence besides the purely technical content, a trainer is required to include elements of motivation in his/her lecture. To inspire the trainees to utilize the training opportunity to the full and strive towards professional excellence. Motivational lectures may also include general topics such as the importance of moral values and civic role & responsibilities as a Pakistani. A motivational lecture should be delivered with enough zeal to produce a deep impact on the trainees. It may comprise of the following:

- Clear Purpose to convey the message to trainees effectively.
- Personal Story to quote as an example to follow.
- Trainees fit so that the situation is actionable by trainees and not represent a just idealism.
- Ending Points to persuade the trainees on changing themselves.

A good motivational lecture should help drive creativity, curiosity, and spark the desire needed for trainees to want to learn more.

The impact of a successful motivational strategy is amongst others commonly visible in increased class participation ratios. It increases the trainees' willingness to be engaged on the practical tasks for a longer time without boredom and loss of interest because they can see in their mind's eye where their hard work would take them in short (1-3 years); medium (3 -10 years) and long term (more than 10 years).

As this tool is expected that the training providers would make arrangements for regular well planned motivational lectures as part of a coordinated strategy interspersed throughout the training period as suggested in the weekly lesson plans in this document.

Course-related motivational lectures online link is available in **Annexure-II**.

(ii) Success Stories

Another effective way of motivating the trainees is using Success Stories. Its inclusion in the weekly lesson plan at regular intervals has been recommended till the end of the training.

A success story may be disseminated orally, through a presentation, or using a video/documentary of someone that has risen to fortune, acclaim, or brilliant achievement. A success story shows how a person achieved his goal through hard work, dedication, and devotion. An inspiring success story contains compelling and significant facts articulated clearly and easily comprehensible words. Moreover, it is helpful if it is assumed that the reader/listener knows nothing of what is being revealed. The optimum impact is created when the story is revealed in the form of:-

- Directly in person (At least 2-3 cases must be arranged by the training institute)
- Through an audio/ videotaped message (2-3 high-quality videos must be arranged by the training institute)

It is expected that the training provider would collect relevant high-quality success stories for inclusion in the training as suggested in the weekly lesson plan given in this document.

Suggestive structure and sequence of a sample success story and its various shapes can be seen in **Annexure III**.

(iii) Case Studies

Where a situation allows, case studies can also be presented to the trainees to widen their understanding of the real-life specific problem/situation and to explore the solutions.

In simple terms, the case study method of teaching uses a real-life case example/a typical case to demonstrate a phenomenon in action and explain theoretical as well as practical aspects of the knowledge related to the same. It is an effective way to help the trainees comprehend in depth both the theoretical and practical aspects of the complex phenomenon in depth with ease. Case teaching can also stimulate the trainees to participate in discussions and thereby boost their confidence. It also makes the classroom atmosphere interesting thus maintaining the trainee interest in training till the end of the course.

Depending on suitability to the trade, the weekly lesson plan in this document may suggest case studies be presented to the trainees. The trainer may adopt a PowerPoint presentation or video format for such case studies whichever is deemed suitable but only those cases must be selected that are relevant and of a learning value.

The Trainees should be required and supervised to carefully analyze the cases.

For this purpose, they must be encouraged to inquire and collect specific information/data, actively participate in the discussions, and intended solutions to the problem/situation.

Case studies can be implemented in the following ways: -

- i. A good quality trade-specific documentary (At least 2-3

	<p>documentaries must be arranged by the training institute)</p> <p>ii. Health & Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training institute)</p> <p>iii. Field visits (At least one visit to a trade-specific major industry/ site must be arranged by the training institute)</p>
Entry-level of trainees	Primary
Learning Outcomes of the course	<p>By the end of this course, students will be able to:</p> <ul style="list-style-type: none"> • Operate Tractor on field, schedule maintenance operation of tractor and execute Hitching and unhitching of Agricultural Implements. • Operate and service farm tractor having different attachments for ploughing, harrowing, harvesting and other agricultural operations. • Hitch, attach and adjusts special equipment (Back how, front lift etc) required for different operations of tractor. • Inspect and Service different systems of Tractor • Diagnose and Troubleshoot different problems of tractor • Replaces defective parts
Course Execution Plan	<p>The total duration of the course: 6 months (26 Weeks)</p> <p>Class hours: 4 hours per day</p> <p>Theory: 20%</p> <p>Practical: 80%</p> <p>Weekly hours: 20 hours per week</p> <p>Total contact hours: 520 hours</p>
Companies offering jobs in the respective trade	<ol style="list-style-type: none"> 1. Tractor and Agricultural Equipment Industry. 2. Automobile industry 3. New Holland by Al Ghazi Tractors Ltd. 4. Massey Ferguson by Millat Tractos Ltd. 5. Paper industry 6. Silage industry 7. Sugar industry 8. Livestock industry 9. Horticulture jobs for Lawn/garden maintaining 10. Land Leveling and command area development companies 11. Forest and range management 12. Transport companies
Job Opportunities	<p>With the help of this course, we will be able to give technical trainings of Tractor operation and maintenance to our youth. There are also opportunities for start-up entrepreneurship due to the high demand in the market in following designated jobs;</p> <ul style="list-style-type: none"> • Tractor Operator • Farm Equipment Operator • Agricultural Implement Operator • Crop harvesting and threshing Machines operator • Tractor Service Technician
No of Students	25

Learning Place	Classroom / Workshop
Instructional Resources	<ol style="list-style-type: none"> 1. Farm Tractor by CR Rai & SC Jain 2. Farm Tractor by Ralph W. Sanders 3. A text book of Farm Machinery By Dr. Abdur Rehman Tahir 4. Tractor Operator by Engr. Rana Imran Sattar & Engr. Atif Latif 5. A Guide to Tractor Operation and Maintenance, Rao EGA, Asia Publications House, London 6. Ultimate Guide to Farm Mechanics by Fred D. Crawshaw, Emil W. Lehmann, Byron D. Halsted 7. Mechanics of Tractor-Implement Performance: A Textbook for Students and Engineers, R. H. Macmillan

MODULES

Scheduled Weeks	Module Title	Learning Units	Remarks
Week 1	Orientation/Course Introduction Safety and workshop practices	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) ▪ Job market ▪ Course Applications ▪ Institute/work ethics <ul style="list-style-type: none"> ▪ Hazard at Workplace ▪ Safety Signs ▪ Safety Measures ▪ Introduction to workshop practices ▪ Work ethics ▪ Measuring and Marking ▪ Hand Sawing and Power Drilling ▪ Filling process 	<p>Home Assignment</p> <ul style="list-style-type: none"> • Task 1 • Task 2 • Task 3 <p><i><u>Details may be seen at Annexure-I</u></i></p>
Week 2	Fundamentals of Tractors	<p>2) Success stories (<i>For further detail please see Page No: 3& 4</i>)</p> <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Engine and its classification ▪ Working principal of IC and EC Engine ▪ Working principal Two stroke and Four stroke engine ▪ Tractor and traction definition ▪ Understand the use of tractors On Road and Farm field ▪ Identify types of tractors w.r.t Model, HP rating etc ▪ Identify different components of Tractor with their nomenclature 	<ul style="list-style-type: none"> • Task 4 • Task 5 <p><i><u>Details may be seen at Annexure-I</u></i></p>
Week 3	Systems of tractor	<p>1) Motivational Lecture(<i>For further detail please see Page No: 3 & 4</i>)</p> <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Systems of Tractor ▪ Cooling system and its types ▪ Servicing of Cooling system ▪ Functions of coolant ▪ Inspecting radiator fan belt tension ▪ Removing and refitting of radiator after service ▪ Removing hose pipe ▪ Remove and install water pump 	<ul style="list-style-type: none"> • Task 6 <p><i><u>Details may be seen at Annexure-I</u></i></p>
Week 4	Fuel systems	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail</i> 	<ul style="list-style-type: none"> • Task7

	tractors	<p><i>please see Page No: 3& 4)</i></p> <p>Students are introduced to learn:</p> <ul style="list-style-type: none"> ▪ Types of fuel used in tractor ▪ Characteristics of different fuels ▪ Compression ratio ▪ Components of fuel system ▪ Fuel flow diagram ▪ Replacement of fuel filter ▪ Removing the air lock ▪ Replacement of fuel injection nozzles 	<p><u>Details may be seen at Annexure-I</u></p> <p>▪ Monthly Test 1</p>
Week 5	Electrical system of Tractors	<ul style="list-style-type: none"> ▪ Motivational Lecture(For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Basic principles of Electricity ▪ Difference between Voltage, Current and Resistance ▪ Parallel and series circuits ▪ Battery and charge storage ▪ Electrolyte and specific gravity ▪ Use of hydrometer ▪ Charging of battery ▪ Circuit of headlight bulb ▪ Circuit of horn 	<p>▪ Task 8</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 6	Brake System of Tractor	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Function of brakes ▪ Types of brakes ▪ Characteristics of brake fluid ▪ Bleed the brake ▪ Change the brake pad ▪ Adjust the brake shoes ▪ Adjust parking brake 	<p>▪ Task 9</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 7	Lubrication system of Tractor	<ul style="list-style-type: none"> ▪ Motivational Lecture(For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Purposes & characteristics of lubrication ▪ Type of lubricants, grade as per SAE, & their application, oil additives, type of lubrication system. ▪ Lubrication system components- different type of Oil pump, Oil filters & oil cooler. ▪ Replacing the oil and oil filter 	<p>▪ Task 10</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 8	Intake & exhaust systems of Tractor	<ul style="list-style-type: none"> ▪ Success stories (For further detail 	<p>▪ Task 11</p>

		<p><i>please see Page No: 3& 4)</i></p> <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Description of Tractor intake system ▪ Description of Tractor Exhaust system ▪ Function of air Turbo charger ▪ Description and function of Air cleaners, ▪ Different type air cleaner ▪ Description of Intake manifolds and material. ▪ Description and function of Exhaust manifold, Exhaust pipe, Mufflers- Reactive, absorptive, Combination ▪ Servicing the air cleaner 	<p><u>Details may be seen at Annexure-I</u></p> <p>▪ Monthly Test 2</p>
Week 9	Hydraulic system of Tractor	<ul style="list-style-type: none"> ▪ Motivational Lecture(<i>For further detail please see Page No: 3& 4)</i> <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Pascal law ▪ Components of hydraulic system ▪ Three point linkage and its adjustment ▪ Draft control system ▪ Position control system ▪ Response control system ▪ Adjustment of Hydraulic system 	<p>• Task 12</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 10	Tractor Instruments and gauges	<ul style="list-style-type: none"> • Success stories (<i>For further detail please see Page No: 3& 4)</i> <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Signs and symbols of tractor operation ▪ Dashboard instruments and gauges ▪ Pre operation inspection of tractor ▪ Cockpit drill ▪ Daily (10 hr) Service of Tractor ▪ Weekly (50 hr) Service of tractor ▪ Monthly (100 hr) Service of tractor ▪ Interpretation of service manual of tractor 	<p>• Task 13</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 11	Final Drive & Drive Shafts	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4)</i> <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Traction and weight transfer ▪ Working of clutch 	<p>▪ Task 14</p> <p><u>Details may be seen at Annexure-I</u></p>

		<ul style="list-style-type: none"> ▪ Types of clutch ▪ Components of gear box ▪ Differential lock ▪ Function and types of power take off (PTO) mechanism. ▪ Types of front & rear axles. Common trouble and their remedies, care and maintenance 	
Week 12	Steering System	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Function and types of steering system. ▪ Description, construction and function of mechanical steering system steering wheel, steering gear box, tie-rod, arms link, ball and socket joints etc. their movement and adjustment. ▪ Description, working and principle of hydraulic steering system. ▪ Different parts such as pump, distributor valves, pipe line and hoses etc 	<p>• Task 15</p> <p><u>Details may be seen at Annexure-I</u></p>
	Start Preparing your portfolio	<ul style="list-style-type: none"> ▪ Motivational Lecture(For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • the concept of design portfolios • the concept of present design work/projects in a professional manner • websites that provide free portfolio hosting such as Behance and Dribble • creating a portfolio • how to select work for presenting in your portfolio 	
	Build your CV	<p>Download professional CV template from any good site (https://www.coolfreecv.com or relevant)</p> <ul style="list-style-type: none"> • Add Personal Information • Add Educational details • Add Experience/Portfolio • Add contact details/profile links 	
Week 13	Midterm		
Week 14	Tractor Wheels & Tyres	<ul style="list-style-type: none"> ▪ Success stories (For further detail please see Page No: 3& 4) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Description, construction and 	

		<p>function of Wheel. Rim sizes. Types & sizes of tyres.</p> <ul style="list-style-type: none"> ▪ Solid, pneumatic & Radial. ▪ Tyre Ply rating, ▪ Tyre tread designs, ▪ Tyre coding and tyre ratings for temperature & traction. ▪ Importance of in-Flatting tyres to correct pressure. ▪ Repair and maintenance of tyres and tubes. ▪ Storage of tyres. ▪ Tyre blasting and its purpose 	<p>• Task 15</p> <p><u>Details may be seen at Annexure-I</u></p>
Week 15	Road signs and symbols	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Highway code ▪ Informatory signs ▪ Cautionary signs ▪ Regulatory signs ▪ Road ethics and courtesies ▪ Operating tractor in forward movement ▪ Operating tractor in reverse movement ▪ Turning tractor in L & U Shape ▪ Parking tractor 	<p>• Task 16</p> <p><u>Details may be seen at Annexure-I</u></p>
	Introduction to Freelancing	<ul style="list-style-type: none"> ▪ Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • the concept of freelancing • how to become freelance and create a sustainable income • pros and cons of freelancing • the ethical and professional way of becoming a productive freelancer • resources available for freelancing in the field of design • how to join freelancing sites • the process of creating a freelancing profile 	
Week 16	Primary tillage Machinery	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> ▪ Fundamentals of Farm Machinery ▪ Classification of farm implements ▪ Hitching cultivator with tractor 	<p>• Task 17</p> <p><u>Details may be seen at Annexure-I</u></p>

		<ul style="list-style-type: none"> Filed planning and using cultivator 	
Week 17	Tractor Implements	<ul style="list-style-type: none"> Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> Description, function of harrows, cultivators, seed drills & tractor trailer. Hitching of equipment. Danger in overloading & incorrect field operation. Average life of Agriculture implements. Description and function of tractor accessories such as Draw bar, top link & Belly Pulley. Setting of draw bar to correct height. Use of Hydraulic lift. Maintenance of tractor accessories. 	<ul style="list-style-type: none"> Task 18 <p><i>Details may be seen at Annexure-I</i></p> <p>Monthly Test 3</p>
Week 18	Tractor driving with implements	<ul style="list-style-type: none"> Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> Hitching harrow and Tractor driving in field conditions Post hole digger and Tractor driving in field conditions Hitching fertilizer spreader and Tractor driving in field conditions Hitching seed Planter and Tractor driving in field conditions 	<ul style="list-style-type: none"> Task 19 <p><i>Details may be seen at Annexure-I</i></p>
Week 19	Tractor driving with implements	<ul style="list-style-type: none"> Motivational Lecture (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> The risks and the measures to be taken to control associated with chemical applications Types of sprayers Types of nozzles Selection of appropriate sprayer Calibration of sprayer Hitching sprayer and Tractor driving in field conditions 	<ul style="list-style-type: none"> Task 20 <p><i>Details may be seen at Annexure-I</i></p>
Week 20	Tractor Operation with stationary machines	<ul style="list-style-type: none"> Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> Install wheat thresher 	<ul style="list-style-type: none"> Task 21 <p><i>Details may be seen at Annexure-I</i></p>

		<ul style="list-style-type: none"> ▪ Attach the thresher with tractor ▪ Operate wheat thresher ▪ Attach tractor with tube well ▪ Operate tube well with tractor 	
Week 21	Employable Project/ Assignment (6 weeks) i.e. 21-26 besides regular classes. OR On the job training (2 weeks)	<ul style="list-style-type: none"> • Guidelines to the Trainees for selection of students employable project like final year project (FYP) • Assign Independent project to each Trainee • A project-based on trainee’s aptitude and acquired skills. • Designed by keeping in view the emerging trends in the local market as well as across the globe. • The project idea may be based on Entrepreneur. • Leading to successful employment. • The duration of the project will be 6 weeks • Final viva/assessment will be conducted on project assignments. • At the end of the session, the project will be presented in a skills competition • The skill competition will be conducted on zonal, regional, and National levels. • The project will be presented in front of Industrialists for commercialization • The best business idea will be placed in the NAVTTC business incubation center for commercialization. <p style="text-align: center;">OR</p> <p>On the job training for 2 weeks:</p> <ul style="list-style-type: none"> • Aims to provide 2 weeks of industrial training to the Trainees as part of the overall training program • Ideal for the manufacturing trades • As an alternative to the projects that involve expensive equipment • Focuses on increasing Trainee’s motivation, productivity, efficiency, and quick learning approach. 	
Week 22			
	How to search and apply for jobs in at least two labor marketplace countries (KSA, UAE, etc.)	<ul style="list-style-type: none"> • Browse the following website and create an account on each website ✓ Bayt.com – The Middle 	• Task 29 <u>Details may be seen at Annexure-I</u>

		<p style="text-align: center;">East Leading Job Site</p> <ul style="list-style-type: none"> ✓ Monster Gulf – The International Job Portal ✓ Gulf Talent – Jobs in Dubai and the Middle East <ul style="list-style-type: none"> • Find the handy ‘search’ option at the top of your homepage to search for the jobs that best suit your skills. • Select the job type from the first ‘Job Type’ drop-down menu, next, select the location from the second drop- down menu. • Enter any keywords you want to use to find suitable job vacancies. • On the results page you can search for part-time jobs only, full-time jobs only, employers only, or agencies only. Tick the boxes as appropriate to your search. • Search for jobs by: <ul style="list-style-type: none"> ✓ Company ✓ Category ✓ Location ✓ All jobs ✓ Agency ✓ Industry 	
<p>Week 23-24</p>	<p>Professional practice methods & legal side of design</p>	<ul style="list-style-type: none"> ▪ Success stories (<i>For further detail please see Page No: 3& 4</i>) <p>Students are introduced to:</p> <ul style="list-style-type: none"> • the standards that define the expectations of a professional tractor driver and mechanic • the principles of integrity that demonstrate respect for the profession, for colleagues, for clients, for audiences or consumers, and society as a whole • the perspectives of the tractor driver and mechanic profession i.e. understanding the profession, the meanings of environmental responsibility, copyright, and ethics • what legalities are involved in professional tractor driver and mechanic • how to build strong professional proposals 	

		<ul style="list-style-type: none"> • copyrights, copyright infringement, plagiarism, crediting creators, purchasing online products, downloading 'free' content • the do's and don'ts of how to price their time, effort, and creativity 	
Week 25-26	Entrepreneurship and Final Assessment in project	<ul style="list-style-type: none"> • Success stories (<i>For further detail please see Page No: 3& 4</i>) • Job Market Searching • Self-employment • Introduction • Fundamentals of Business Development • Entrepreneurship • Startup Funding • Business Incubation and Acceleration • Business Value Statement • Business Model Canvas • Sales and Marketing Strategies • How to Reach Customers and Engage • Stakeholders Power Grid • RACI Model, SWOT Analysis, PEST Analysis • SMART Objectives • OKRs • Cost Management (OPEX, CAPEX, ROCE, etc.) 	Final Assessment
Final Assessment			

Tasks For Certificate in Tractor Driver and Mechanic

Task No.	Task	Description	Week
1.	Use the fire extinguisher	<ul style="list-style-type: none"> Extinguish an oil fire with appropriate extinguisher 	Week 1
2.	Work Ethics	<ul style="list-style-type: none"> Generate a report on Institute work ethics and professionalism 	
3.	Identify hazards in workshop	<ul style="list-style-type: none"> Prepare a report of at least 10 safety measures during workshop practices 	
4.	Selection of tractor	<ul style="list-style-type: none"> Select suitable tractor for orchard spraying and detail the reasons for selection. 	Week-2
5.	Identify body components of tractor	<ul style="list-style-type: none"> Identify the fuel tank and radiator hose pipes of tractor 	
6.	Service the Radiator	<ul style="list-style-type: none"> Replace the coolant Remove the hose pipes Remove the fan shroud Replace the radiator Clean it and refit according to prescribed method 	Week 3
7.	Remove the Air lock	<ul style="list-style-type: none"> Remove the fuel supply line Operate the lift pump Remove the air bubble Refit the fuel line 	Week 4
8.	Replace the horn	<ul style="list-style-type: none"> Identify the defective horn Remove the wire connections Remove the horn Refit horn and connect the wires Check the circuit connectivity by applying horn 	Week 5
9.	Bleed the brake	<ul style="list-style-type: none"> Operate the brake paddle Open the brake nipple Bleed the brake Tight the brake nipple Top up the brake fluid 	Week 6
10.	Replace the engine oil	<ul style="list-style-type: none"> Remove the drain plug Remove the oil filter Refit new oil filter and drain plug Top-up the oil 	Week 7
11.	Service the Air cleaner	<ul style="list-style-type: none"> Remove the pre- air cleaner Clean the pre- air cleaner Install Pre-air cleaner Remove the clamps of hose pipe and air 	Week 8

		<p>cleaner</p> <ul style="list-style-type: none"> Wash the air cleaner with kerosene oil Wash the air cleaner with water Install the air cleaner Top up the cleaner with oil 	
12	Adjust the Draft control	<ul style="list-style-type: none"> Adjust the Quadrant Adjust the control lever position on quadrant Adjust the position control lever on transport position Adjust the Draft control lever on sector mark Adjust vertical lever on right angle Tight the nut and lock Check the adjustment during field operation 	Week 9
13	Interpret and follow periodic maintenance chart	<ul style="list-style-type: none"> Interpret the periodic maintenance charts Service Tractor according the given operational hours 	Week 10
14	Greasing practice	<ul style="list-style-type: none"> Lubricate the points of tractor 	Week 11
15	Identification of tyre	<ul style="list-style-type: none"> Elaborate tyre coding Describe the storage procedure of tyres 	Week 14
16	Tractor operation	<ul style="list-style-type: none"> Perform pre start check of tractor Perform cockpit drill Operate tractor in forward movement Park tractor on identified area 	Week 15
17	Land preparation	<ul style="list-style-type: none"> Plane the filed area operation Hitch the cultivator with three point linkage Perform cultivation with cultivator Detach the cultivator at prescribed area after operation 	Week 16
18	Wheat sowing practice	<ul style="list-style-type: none"> Select appropriate seed drill Calibrate the seed drill Hitch the seed drill with tractor Operate tractor with seed drill Measure the seed dropping rate at field Detach the deed drill at prescribed area after operation 	Week 17
19	Fertilizer application	<ul style="list-style-type: none"> Select appropriate machine for fertilizer spreading Hitch the fertilizer spreader with tractor Park tractor at level surface Calibrate the fertilizer spreader Operate tractor with fertilizer spreader in field conditions Measure the fertilizer application rate in field 	Week 18
20	Spraying crops	<ul style="list-style-type: none"> Table suitable PPEs Select appropriate spraying equipment Select appropriate nozzle as per given task Calibrate the sprayer 	Week 19

		<ul style="list-style-type: none"> • Apply spraying on given crop 	
21	Crop threshing	<ul style="list-style-type: none"> • Select the appropriate thresher for given crop • Attach thresher with tractor • Operate tractor in attachment with thresher • Adjust the rated Speed of PTO • Measure the grain loses during threshing • Detach the thresher from tractor at prescribed area • Clean the thresher and lubricate the lubrication points 	Week 20
22			Week 21-26

Motivational Lectures

What is freelancing and how you can make money online - BBCURDU

<https://www.youtube.com/watch?v=9jCJN3Ff0kA>

What Is the Role of Good Manners in the Workplace? By Qasim Ali Shah | In Urdu

<https://www.youtube.com/watch?v=Qi6Xn7yKIIQ>

Hisham Sarwar Motivational Story | Pakistani Freelancer

https://www.youtube.com/watch?v=CHm_BH7xAXk

21 Yr Old Pakistani Fiverr Millionaire | 25-35 Lakhs a Month Income | Interview

<https://www.youtube.com/watch?v=9WrmYYhr7S0>

Success Story of a 23 Year - Old SEO Expert | How This Business Works | Urdu Hindi Punjabi

<https://www.youtube.com/watch?v=tIQ0CWgszI0>

Failure to Millionaire - How to Make Money Online | Fiverr Superhero Aaliyaan Success Story

<https://www.youtube.com/watch?v=d1hocXWSpus>

Why You Should Never Mock a Farmer | Lamborghini

<https://www.youtube.com/watch?v=pGLdMO9THXo>

Story of the Tractor Woman of India

<https://www.bizencyclopedia.com/article/story-of-the-tractor-woman-of-india>

SUGGESTIVE FORMAT AND SEQUENCE ORDER OF MOTIVATIONAL LECTURE.

Mentor

Mentors are provided an observation checklist form to evaluate and share their observational feedback on how students within each team engage and collaborate in a learning environment. The checklist is provided at two different points: Once towards the end of the course. The checklists are an opportunity for mentors to share their unique perspective on group dynamics based on various team activities, gameplay sessions, pitch preparation, and other sessions, giving insights on the nature of communication and teamwork taking place and how both learning outcomes and the student experience can be improved in the future.

Session- 1 (Communication):

Please find below an overview of the activities taking place Session plan that will support your delivery and an overview of this session's activity.

Session- 1 OVERVIEW
Aims and Objectives:
<ul style="list-style-type: none"> • To introduce the communication skills and how it will work • Get to know mentor and team - build rapport and develop a strong sense of a team • Provide an introduction to communication skills • Team to collaborate on an activity sheet developing their communication, teamwork, and problem-solving • Gain an understanding of participants' own communication skills rating at the start of the program

Activity:	Participant Time	Teacher Time	Mentor Time
Intro Attend and contribute to the scheduled.			
Understand good communication skills and how it works.			
Understand what good communication skills mean			
Understand what skills are important for good communication skills			
Key learning outcomes:	Resources:		Enterprise skills developed:
<ul style="list-style-type: none"> • Understand the communication skills and how it works. 	<ul style="list-style-type: none"> • Podium • Projector • Computer 		<ul style="list-style-type: none"> • Communication • Self Confidence • Teamwork

<ul style="list-style-type: none"> • Understand what communication skills mean • Understand what skills are important for communication skills 	<ul style="list-style-type: none"> • Flip Chart • Marker 	
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Schedule	Mentor Should do
Welcome: 5 min	Short welcome and ask the Mentor to introduce him/herself. Provide a brief welcome to the qualification for the class. Note for Instructor: Throughout this session, please monitor the session to ensure nothing inappropriate is being happened.
Icebreaker: 10 min	Start your session by delivering an icebreaker, this will enable you and your team to start to build rapport and create a team presentation for the tasks ahead. The icebreaker below should work well at introductions and encouraging communication, but feel free to use others if you think they are more appropriate. It is important to encourage young people to get to know each other and build strong team links during the first hour; this will help to increase their motivation and communication throughout the sessions.
Introduction & Onboarding: 20mins	Provide a brief introduction of the qualification to the class and play the “Onboarding Video or Presentation”. In your introduction cover the following: 1. Explanation of the program and structure. (Kamyab jawan Program) 2. How you will use your communication skills in your professional life. 3. Key contacts and key information – e.g. role of teacher, mentor, and SEED. Policies and procedures (user agreements and “contact us” section). Everyone to go to the Group Rules tab at the top of their screen, read out the rules, and ask everyone to verbally agree. Ensure that the consequences are clear for using the platform outside of hours. (9am-8pm) 4. What is up next for the next 2 weeks ahead so young people know what to expect (see pages 5-7 for an overview of the challenge). Allow young people to ask any questions about the session topic.
Team Activity Planning: 30 minutes	MENTOR: Explain to the whole team that you will now be planning how to collaborate for the first and second collaborative Team Activities that will take place outside of the session. There will not be another session until the next session so this step is required because communicating and making decisions outside of a session requires a different strategy that must be agreed upon so that everyone knows what they are doing for this activity and how. <ul style="list-style-type: none"> • “IDENTIFY ENTREPRENEURS” TEAM ACTIVITY • “BRAINSTORMING SOCIAL PROBLEMS” TEAM

	<p style="text-align: center;">ACTIVITY”</p> <p><i>As a team, collaborate on a creative brainstorm on social problems in your community. Vote on the areas you feel most passionate about as a team, then write down what change you would like to see happen.</i></p> <p>Make sure the teams have the opportunity to talk about how they want to work as a team through the activities e.g. when they want to complete the activities, how to communicate, the role of the project manager, etc. Make sure you allocate each young person a specific week that they are the project manager for the weekly activities and make a note of this.</p> <p>Type up notes for their strategy if this is helpful - it can be included underneath the Team Contract.</p>
<p>Session Close: 5 minutes</p>	<p>MENTOR: Close the session with the opportunity for anyone to ask any remaining questions.</p> <p>Instructor: Facilitate the wrap-up of the session. A quick reminder of what is coming up next and when the next session will be.</p>

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	Self & Family background	<p>Danyal Saleem, who lives in Mirpur (AJK), is an example of how hard work and perseverance can reap rich rewards when bidding for projects online. The graphic designer works exclusively on an online freelancing platform and has earned, on average, US\$20,000 per month for the past several months. But this isn't a story of overnight success – Danyal has had to work hard to differentiate himself and stay true to his goal.</p> <p>It was a full year later, in May 2017, when Danyal finally decided to jump in. He signed up for one of the numerous sites that connect designers or coders with people or companies that have small projects, like designing a logo or building a website. He had already started a small business to help pay for his college education, so he was nervous and apprehensive about the decision. "I gave myself two or three months at most. If I didn't succeed, then I would go back to running the business as it was showing potential," he says.</p> <p>If at first, you don't succeed, try try again</p>
2.	How he came on board NAVTTC Training/ or got trained through any other source	Certification in graphic designing from STEPS(NAVTTC partner institute)
3.	Post-training activities	<p>Danyal's area of expertise is in graphic design. In his first month using Fiverr, he pitched mostly for projects centered around logo designing. But it wasn't so simple. In the first few weeks, he didn't hear back from even a single client, despite pitching for dozens of projects.</p> <p>"I needed to understand what worked, so I read blogs, participated in forums, and analyzed profiles of successful freelancers. It was an uphill struggle, but I didn't want to give up," he explains.</p> <p>Danyal says he understands why clients would be apprehensive giving projects to untested freelancers. They have hundreds of options to choose from, he explains, and to give a project to someone with no experience requires a strong leap of faith.</p>

		<p>A slow stream of projects started to come Danyal's way. Within a few months, he was landing an average of a hundred projects every month, with a large number of repeat clients. He also expanded the range of his professional services, branching out from logo design to business cards, banners, Facebook cover pages, letterheads, and stationery.</p> <p>But he's had to face his fair share of challenges too. The shoddy state of internet infrastructure in his city, Mirpur, threatened to derail his freelancing career. "Sometimes I haven't had connectivity for two days straight," he explains. "That's unthinkable for someone who makes his livelihood on the internet."</p>
4.	Message to others (under training)	<p>Take the training opportunity seriously Impose self-discipline and ensure regularity Make Hard work pays in the end so be always ready for the same.</p>

Note: Success story is a source of motivation for the trainees and can be presented in several ways/forms in a NAVTTC skill development course as under: -

1. To call a passed out successful trainee of the institute. He will narrate his success story to the trainees in his own words and meet trainees as well.
2. To see and listen to a recorded video/clip (5 to 7 minutes) showing a successful trainee Audio-video recording that has to cover the above-mentioned points.*
3. The teacher displays the picture of a successful trainee (name, trade, institute, organization, job, earning, etc) and narrates his/her story in the teacher's own motivational words.

* The online success stories of renowned professional can also be obtained from **Annex-II**

Workplace/Institute Ethics Guide

Work ethic is a standard of conduct and values for job performance. The modern definition of what constitutes good work ethics often varies. Different businesses have different expectations. Work ethic is a belief that hard work and diligence have a moral benefit and an inherent ability, virtue, or value to strengthen character and individual abilities. It is a set of values-centered on the importance of work and manifested by determination or desire to work hard.

The following ten work ethics are defined as essential for student success:

1. **Attendance:**

Be at work every day possible, plan your absences don't abuse leave time. Be punctual every day.

2. **Character:**

Honesty is the single most important factor having a direct bearing on the final success of an individual, corporation, or product. Complete assigned tasks correctly and promptly. Look to improve your skills.

3. **Team Work:**

The ability to get along with others including those you don't necessarily like. The ability to carry your weight and help others who are struggling. Recognize when to speak up with an idea and when to compromise by blend ideas together.

4. **Appearance:**

Dress for success set your best foot forward, personal hygiene, good manner, remember that the first impression of who you are can last a lifetime

5. **Attitude:**

Listen to suggestions and be positive, accept responsibility. If you make a mistake, admit it. Values workplace safety rules and precautions for personal and co-worker safety. Avoids unnecessary risks. Willing to learn new processes, systems, and procedures in light of changing responsibilities.

6. **Productivity:**

Do the work correctly, quality and timelines are prized. Get along with fellows, cooperation is the key to productivity. Help out whenever asked, do extra without being asked. Take pride in your work, do things the best you know-how. Eagerly focuses energy on accomplishing tasks, also referred to as demonstrating ownership. Takes pride in work.

7. Organizational Skills:

Make an effort to improve, learn ways to better yourself. Time management; utilize time and resources to get the most out of both. Take an appropriate approach to social interactions at work. Maintains focus on work responsibilities.

8. Communication:

Written communication, being able to correctly write reports and memos.
Verbal communications, being able to communicate one on one or to a group.

9. Cooperation:

Follow institute rules and regulations, learn and follow expectations. Get along with fellows, cooperation is the key to productivity. Able to welcome and adapt to changing work situations and the application of new or different skills.

10. Respect:

Work hard, work to the best of your ability. Carry out orders, do what's asked the first time. Show respect, accept, and acknowledge an individual's talents and knowledge. Respects diversity in the workplace, including showing due respect for different perspectives, opinions, and suggestions.