

Government of Pakistan
National Vocational and Technical Training Commission

Prime Minister's Hunarmand Pakistan Program

"Skills for All"



Course Contents / Lesson Plan
Course Title: Motor Winding
Duration: 3 Months

Revised Edition

Trainer Name	
Course Title	Motor Winding
Objectives and Expectations	<p>Employable skills and hands-on practice for Motor Winding</p> <p>The application of electric motors are numerous and varied and the types in use today range between large and small, simple and complicated. Even with the most efficient maintenance, all these have to be repaired sooner or later. This course offers a practical way how rewinding is carried out and it will be of help to fitters, engineers, apprentices, students and all who have access to a workshop with the necessary equipment. The various types of motors covered include split phase, capacitor-start, repulsion, repulsion-induction, repulsion start, shaded-pole, three-phase induction, universal and DC. Although the rewinding of motors is specifically dealt with, the technique of rewinding is, of course, applicable to the stators, rotors and armatures of AC. and AC generators.</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"> <li data-bbox="384 1285 1514 1574">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. <li data-bbox="384 1574 1514 1977">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. <li data-bbox="384 1977 1514 2089">iii. A module on <u>Work Place Ethics</u> 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 documentaries must be arranged by the training institute)
- ii. Health & Safety case studies (2 cases regarding safety and industrial accidents must be arranged by the training institute)
- iii. Field visits (At least one visit to a trade-specific major industry/site must be arranged by the training institute)

Entry-level of trainees	Middle
Learning Outcomes of the course	<p>By the end of this course, students will be able to:</p> <ul style="list-style-type: none"> • Recognize the dangers and observe relevant safety precautions while performing / supervising hot work. • Understand the differences and working principles of various winding equipment on board. • Understand methodologies for original winding is accurately copied and replaced with new material. • Understand principles of actual design of any particular motor. • Understand principles of Rewinding of small and large motors. • Acquire the knowledge of correct winding and actual design of any particular motor. • Do project based case studies on motor winding.
Course Execution Plan	<p>The total duration of the course: 3 months (12 Weeks) Class hours: 4 hours per day Theory: 20% Practical: 80% Weekly hours: 20 hours per week Total contact hours: 240 hours</p>
Companies offering jobs in the respective trade	<ol style="list-style-type: none"> 1. Steel manufacturing industry. 2. Construction industry. 3. Fertilizer industry 4. Chemical industry 5. Sugar industry 6. Industrial projects. 7. Shipyards. 8. Railways. 9. Pakistan Ordinance Factory Wah. 10. Heavy Mechanical Complex Taxila. 11. Heavy Forge and Foundry Taxila. 12. Tractor and Agricultural Equipment Industry. 13. Automobile industry. 14. Local industry. 15. Local metal fabrication shops etc.
Job Opportunities	<p>All over the world there is a high demand in Motor Winding for Winders in various fields Such as: Mechanical, Electrical, constructors. With the help of this course, we will be able to give technical trainings of various Motor winding to our youth. There are also opportunities for start-up entrepreneurship due to the high demand in the market in following designated job:</p> <ul style="list-style-type: none"> • Motor Winder
No of Students	25
Learning Place	Classroom / Lab
Instructional Resources	<p>Online Links:</p> <ol style="list-style-type: none"> 1. The Induction Motor: Its Theory and Design, Set Forth by a Practical Method. https://www.youtube.com/watch?v=P3WITwEnLnM 2. Full rewinding 36 slot 5HP 1440 RPM 3phase winding

<https://www.youtube.com/watch?v=oamswK9asvM>

3. How to rewind the motor of washing machine 24 slots
https://www.youtube.com/watch?v=_mFH47Fwebo

Reference Books

4. Electric Motor Repair, Part 1
5. Rewinding Small Motors KARL WILKINSON
Electric Motor Repair, Robert Rosenberg
6. Practical A.C. and D.C. Motor Winding
K. B. Bhatia

MODULES

Scheduled Week	Module Title	Learning Units	Remarks
Week 1	<p>Orientation/Course Introduction</p> <p>Health and Safety</p>	<p>Motivational Lecture (For further detail please see Page No: 3& 4)</p> <ul style="list-style-type: none"> • Job market • Course Applications • Institute/work ethics <p>Use of personal protective equipment</p> <ul style="list-style-type: none"> • Demonstration uses of PPE's equipment <p>Use tools and equipment</p> <ul style="list-style-type: none"> • Identify the tool and select right tools for right job • Demonstration safe use of tools and equipment. • Maintain and / or replace tool insulation • Clean and store electrical tools insulation, equipment and material. <p>Identify hazards associated with electricity</p> <ul style="list-style-type: none"> • Describe electricity hazards • Apply the protection procedures for electric shock <p>Identify safety signs, symbols and regulations</p> <ul style="list-style-type: none"> • Identify safety signs and symbols associated with electricity hazards • Identify and interpret safety and other regulatory requirements <p>Safety precaution when working with electricity</p> <ul style="list-style-type: none"> • Identify the uses of equipment with frayed cords • Identify working area • Power supply while working • Use of ladder 	<ul style="list-style-type: none"> • Task 1 • Task 2 • Task 3 <p style="text-align: center;"><i><u>Details may be seen at Annexure-I</u></i></p>

<p>Week 2</p>	<p>Electrical Theory-I</p>	<p>Success stories (For further detail please see Page No: 3& 4)</p> <p>Describe basic electrical concepts</p> <ul style="list-style-type: none"> • Demonstrate knowledge of electron theory • Definition of matter • Different states of matter with examples • Definition of atom, molecule and element • Atomic structure and shells • Description of proton, electron and neutron • Definition of valence and free electrons • Properties of positive and negative charge • Definition of electricity <p>Describe current flow</p> <ul style="list-style-type: none"> • Conventional current and electron flow theory • Static and dynamic charge <p>Describe conductor, semi-conductor and Insulator.</p> <ul style="list-style-type: none"> • Properties of conductors, insulators and semiconductors • Different type of material • Atomic structure • Current flowing ability • Types of diodes, e.g. <ul style="list-style-type: none"> ○ Photodiode ○ Reversing diode ○ Blocking diode <p>Some important definition</p> <ul style="list-style-type: none"> • Motor • Generator • Transformer • Voltage • Current • Resistance • Fuse • Breaker • Inductor • Capacitor • Wire • Cable • Wiring system • Power factor 	<ul style="list-style-type: none"> •Task 4 •Task 5
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		<p>Describe factors affecting resistance of conductors</p> <ul style="list-style-type: none"> • Definition of resistivity • Resistivity of materials • Factors affecting resistance of conductors • Calculating resistance of a conductor with regard to cross sectional area, length, resistivity and operating temperature <p>Apply Ohm's law for DC circuits</p> <ul style="list-style-type: none"> • Definition • Laws of resistance • Relation between current (I), voltage (V) and resistance (R) <p>Calculate electrical quantities in DC circuits based on Ohm's Law</p> <ul style="list-style-type: none"> • Ohm's law wheel <ul style="list-style-type: none"> ○ Calculating voltage ○ Calculating current ○ Calculating resistance • Calculating power 	
	<p>Electrical Theory-II</p>	<p>Motivational Lecture (For further detail please see Page No: 3& 4)</p> <p>Describe sources of electricity generation</p> <ul style="list-style-type: none"> • Sources of electricity generation <ul style="list-style-type: none"> ○ Hydro electric ○ Thermal electric ○ Nuclear electric ○ Electrochemistry ○ Photovoltaic effect ○ Tidal source ○ Piezoelectric effect ○ Bio Gas • Definition of AC and DC electricity • Varying/sinusoidal nature of current and voltage in AC • Non-varying/uniform nature of current and voltage in DC • Importance of polarity in DC circuits 	

	<p>Electrical Theory-III</p>	<p>Series and parallel and combination series and parallel Circuit and its calculation</p> <ul style="list-style-type: none"> • Circuit layout <ul style="list-style-type: none"> ○ Series ○ Parallel ○ Series and Parallel • Circuit characteristics <ul style="list-style-type: none"> ○ Voltage ○ Current ○ Resistance • Fault finding procedures <p>Calculate electrical quantities in series and parallel circuits</p> <ul style="list-style-type: none"> • Series and parallel wheel <ul style="list-style-type: none"> ○ Calculating voltage ○ Calculating current ○ Calculating resistance <p>Calculating power</p>	
	<p>Electrical Theory-IV</p>	<p>Success stories (For further detail please see Page No: 3& 4)</p> <p>Perform measurements in electrical circuits and Identify digital and analogue instruments</p> <ul style="list-style-type: none"> • Definition of analog and digital instrument • Examples of analogue and digital displayed instruments • Use of clamp ON meter(multimeter) analog and digital • Use of multi-meter digital and analog meter <p>Scale Reading</p> <ul style="list-style-type: none"> • Identification of millimeter inch, feet, millimeter, meter • Identification and using of micrometer • Identification and using of Vanier clipper <p>Measure instrument</p> <ul style="list-style-type: none"> • Uses of Multi meter • Measure current AC/DC • Measure voltage AC/DC • Measure Resistance • Continuity test • Measure capacitance • Measure Temperature 	<ul style="list-style-type: none"> • Task 6 • Task 7 • Tasks 8 • Tasks 9 • Task 10 • Tasks 11 • Tasks 12 <p><u>Details may be seen at Annexure-I</u></p>

		<ul style="list-style-type: none"> • Diode checking <p>Measure frequency of AC circuit</p> <ul style="list-style-type: none"> • Functioning of oscilloscope • Hertz meter <p>Measure real and apparent power</p> <ul style="list-style-type: none"> • Definition of real, apparent and reactive power • Relationship between real, apparent and reactive power • Units of real/active, apparent and reactive power • Measuring real and apparent power <p>Measure voltage and frequency of single and three phase grid electricity</p> <ul style="list-style-type: none"> • Measuring single phase voltage of grid electricity • Measuring three phase voltage of grid electricity <p>Measuring frequency of grid electricity</p>	
	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 3	Testing and Troubleshooting of Motor-I	<p>Motivational Lecture (For further detail please see Page No: 3& 4)</p> <p>Mechanical fault</p> <ul style="list-style-type: none"> • Improve bearing operation • Bent rotor shaft • Broken brush holder • Shaped bandings • Clotted /closed cooling ducts • Loose /broken end shield • Loose rotor stator lamination • Unbalancing rotor • Misaligned load motor coupling • Incorrect installation <p>Electrical faults</p> <ul style="list-style-type: none"> • Punctured insulation • Open circuit in winding • Short circuit in winding • Short circuit group • Incorrect connection • Loss of contacts in current 	<ul style="list-style-type: none"> • Task 13 • Task 14 • Task 15 <p><i><u>Details may be seen at Annexure-I</u></i></p>

		<ul style="list-style-type: none"> • carrying parts • Burning of commutator • Wrong setting of brush • Wrong connection in coils • Open rotor bars • Reversed coil <p>Magnetic faults</p> <ul style="list-style-type: none"> • Short circuit in core • Unsmoothed of air hole at rotor • High temperature of core burn the insulation of core <p>Explain the purpose of visual inspection</p> <ul style="list-style-type: none"> • Damage identification <ul style="list-style-type: none"> ○ cracks ○ disorders(shape &structure) • broken parts <p>Demonstrate procedure for implementing testing</p> <ul style="list-style-type: none"> • Process of different tests • Electrical parameters <p>Demonstrate testing procedures for motor winding</p> <ul style="list-style-type: none"> • Visual inspection • Related information • Conditions of running • Burning issue • Overheating • Taking more current • Under speed (RPM) • Coil groups • Coil pitch • Running and starting winding test • Short showing at series board • Hunting issue <p>Interpret test results</p> <ul style="list-style-type: none"> • Interpretation of drawings and circuit diagrams <p>Implement troubleshooting procedures and identify fault</p> <ul style="list-style-type: none"> • Troubleshooting • Electrical and electronic parameters <p>List the problem that may occur when test motor</p> <ul style="list-style-type: none"> • Winding insulation fault • Bearing problem • Coupling fault • Rotor stator vibration fault 	
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	<p>Testing and Troubleshooting-II</p>	<p>Success stories (For further detail please see Page No: 3& 4)</p> <p>Common tests to locate faults in A.C Motors Stator</p> <ul style="list-style-type: none"> • Open circuit test • Short circuit test • Leakage test <p>Short circuit between phase winding/between coil between groups</p> <ul style="list-style-type: none"> • By using magger • Low resistance method • Hand touching method • Lamp brightness method • Voltage drop method • Bench growler method • Use of field strength method • Use of compass • Line current method <p>Grounded winding</p> <ul style="list-style-type: none"> • Reversed coil • Reversed coil group • Reversed phase • Wrong grouping and connection • Wrong connection for given voltage • Open rotor bar <p>Testing of induction motor</p> <ul style="list-style-type: none"> • Routine test <ul style="list-style-type: none"> 1. insulation test 2. high voltage test 3. temperature rise test 4. leakage current test 5. overload test 6. core loss test 7. friction lose test 8. sound test <p>Common tests to locate faults in D.C Motors Armature</p>	<ul style="list-style-type: none"> • Task 16 • Task 17 • Task 18 • Task 19 • Task 20 • Task 21 • Task 22 • Task 23 • Task 24 • Task 25 <p><i><u>Details may be seen at Annexure-I</u></i></p>
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		<ol style="list-style-type: none"> 1. open circuit 2. short circuit 3. Earth test <p>Common tests to locate faults in D.C Motors field coil</p> <ol style="list-style-type: none"> 1. short circuit 2. open circuit 3. Polarity of field coil <p>Testing Method</p> <p>Wiring testing and troubleshooting</p> <ul style="list-style-type: none"> • Continuity test • Open circuit test • Short circuit test • Insulation resistance leakage test • Earth continuity test <p>Remove faults</p> <p>Carry out operational testing</p> <ul style="list-style-type: none"> • Product knowledge; • Testing procedures and equipment <p>Explain the reason for short circuit and leakage current</p> <ul style="list-style-type: none"> • Breakage of natural and phase • Short circuits between Phase natural • Insulation break of wire • Temperature effect • Load increases • Low quality cable, material • Un-awareness <p>Identify the fault finding techniques</p> <ul style="list-style-type: none"> • Visual inspection • Technical inspection 	
Week 4	Repairing and Maintenance Of Motor winding	<p>Motivational Lecture (For further detail please see Page No: 3& 4)</p> <p>Maintenance work on AC Motor</p> <ul style="list-style-type: none"> • Preventive maintenance <ol style="list-style-type: none"> 1. Daily 2. Weekly 3. Monthly 4. Yearly • Scheduled maintenance 	<ul style="list-style-type: none"> • Task 25 • Task 26 • Task 27 • Task 28 • Task 29 • Task 30

Motor Winding

		<ol style="list-style-type: none"> 1. Daily 2. Weekly 3. Monthly 4. Yearly <p>Interpret circuit diagram for Motor</p> <ul style="list-style-type: none"> • Drawings • Symbols • Specifications <p>Outline safety measures associated with Motor winding</p> <ul style="list-style-type: none"> • Never work alone • Know the system • Condition of tools and test equipment • Personal protective Equipment's <ul style="list-style-type: none"> ○ Safety hat ○ Eye protection ○ Dry leather gloves • Be aware when working on heights • Measure first <ul style="list-style-type: none"> ○ Conductivity ○ Voltage ○ Current <p>Replace or repair faulty parts or components</p> <ul style="list-style-type: none"> • Repair or replacing procedures • Trouble shooting of winding • Trouble shooting of cable short/open circuit • Replacement of coil • Replacement of coil group • Replacement of starting running winding • Replacement of armature and field winding • Replacement of bearing • Replacement of shaft • Replacement of side cover • Replacement of fan • Replacement of commutator 	<ul style="list-style-type: none"> • Task 31 • Task 32 • Task 33 • Task 34 • Task 35 • Task 36 • Task 37 <p><i><u>Details may be seen at Annexure-I</u></i></p>
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Motor Winding

		<ul style="list-style-type: none"> • Replacement of Corban brush <p>List the tools required for installation solar panels</p> <ul style="list-style-type: none"> • Radiant meter • Compass • Volt meter • Clamp meter • Hammer set wooden and iron • Bench vice • Nut bolts • Metal frame • Drill machine • Spanner set • Standard Tool kit 	
	<p>Introduction to the Motor's</p>	<ul style="list-style-type: none"> • Short explain the type of motor <p>1. AC Motor</p> <p>1.1. Single phase AC motor</p> <ol style="list-style-type: none"> I. Resistance type split phase motor II. Capacitor start motor III. Capacitor run motor IV. two value capacitor motor V. shaded pole motor VI. repulsion motor <ul style="list-style-type: none"> ◆ straight repulsion ◆ compensated repulsion ◆ repulsion start induction run motor ◆ repulsion induction motor VII. AC series motor VIII. Universal motor IX. Hysteresis motor X. Stepper motor XI. Servo motor <ol style="list-style-type: none"> I. AC servo motor II. DC servo motor III. Two phase AC servo motor IV. Three phase AC servo motor <p>1.2. Three phase AC motor</p> <ul style="list-style-type: none"> • Induction Motor <ol style="list-style-type: none"> I. Wound rotor II. Squirrel cage • Synchronous Motor <p>2. DC Motor</p> <ul style="list-style-type: none"> • DC series Motor 	

		<ul style="list-style-type: none"> • DC Shunt Motor • DC Compound Motor <ul style="list-style-type: none"> I. Cumulative compound Motor II. Differential compound motor 	
	<p>➤ Former Making</p> <p>➤ Success Story</p> <p><i>(For further detail please see Page No: 4 & 5)</i></p>	<ul style="list-style-type: none"> • Former for a Simple Field Coil • Cutting Out the Former • Preparing the Corners • Completing the Former • Formers for Complex Coils • Hair-pin Coils • Nail Former 	
	<p>Start Preparing your portfolio</p>	<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 design portfolios • the concept of present design work/projects in a professional manner • websites that provide free portfolio hosting such as enhance and Dribble • creating a portfolio <ul style="list-style-type: none"> • how to select work for presenting in your portfolio 	
	<p>Build your CV</p>	<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 	
<p>Week 5</p>	<p>DC motor-I</p> <p>Rewinding of Armature winding</p>	<p>Development and practice of Armature winding</p> <ul style="list-style-type: none"> • Lap winding <ol style="list-style-type: none"> 1. Single layer lap winding 2. Double layer lap winding 3. Equivalent ring winding <ul style="list-style-type: none"> • Wave winding <ol style="list-style-type: none"> 1. Single layer wave winding 2. Double layer wave winding. 3. Equivalent ring winding <p>Explain and practice the following term according to the winding design for smooth working as motor winder</p>	<ul style="list-style-type: none"> • Task 38 • Task 39 • Task 40 • Task 41 • Task 42 • Task 43 • Task 44 • Task 45 • Task 46

Motor Winding

		<ul style="list-style-type: none"> • Conductor • Turn • Coil • Coil side • Overhang coil group • Winding • Pole pitch • Coil pitch • Winding pitch • Back pitch • Front pitch • Resultant pitch • Commutator pitch • Full pitched winding • Short pitch winding • Simplex winding • Duplex winding • Progressive winding • Retrogressive winding • Winding Series, Repulsion, Repulsion-induction and Repulsion-start Induction-run Armatures • Lap and Wave Winds • The Former Wind • The Random-wound Former Coil • various shapes of armature slots • Commutator Connections • methods of commutator connections • methods of closing slots • Securing the Windings • Trimming the paper to the correct height. 	<p><u>Details may be seen at Annexure-I</u></p>
<p>Week 6</p>	<p>DC Motor-II Rewinding of field coil ➤ Success Story</p> <p><i>(For further detail please see Page No: 4 & 5)</i></p>	<p>Development and practice of field coil rewinding</p> <ul style="list-style-type: none"> • Types of field winding • The Shunt • The Series Connection • The Compound Connection • The Compound Interpol Machine • Winding D.C. Shunt Fields • Making the Former and Rewinding the Coil • Winding Series Fields • Inter poles • Compound Fields • Winding Techniques • Structure of value chains; Value chain actors and service providing institutions. 	<ul style="list-style-type: none"> • Task 47 • Task 48 • Task 49 <p><u>Details may be seen at Annexure-I</u></p>

<p>Week 7</p>	<p>Coil Winding</p> <p>➤ Motivational Lecture</p> <p><i>(For further detail please see Page No: 4 & 5)</i></p>	<ul style="list-style-type: none"> • Simple coil-winding rig-up using lathe and rev-counter. • Simple Winding Machine • Hand Winder • Motorizing the Winder • Automatic Traverse • Methods of Speed Control • Simple form of swash-plate drive to obtain infinitely variable ratio between limits. • Compound swash-plate drive • Reversing the Lead Screw • The Wire Guide • Winding the Field Coil • Coil Shape • Layout for heavy winding head. • Typical Winding Machines • Tension device • Effect of winding heavy circular of rectangular conductor on small former • Showing wide angle phase when winding coils with two heavy conductors in parallel. • Winding with Parallel Conductors • Square conductor • Rectangular conductor 	<ul style="list-style-type: none"> • Task 50 • Task 51 • Task 52 <p><u>Details may be seen at Annexure-I</u></p>
<h2>Midterm</h2>			
<p>Week 8</p>	<p>➤ Single-phase Stators</p> <p>➤ Success Story <i>(For further detail please see Page No: 4 & 5)</i></p>	<ul style="list-style-type: none"> • The Concentric Wind • Obtaining the Winding Diagram • Normal arrangement of coils for a single-phase stator • Similar arrangement, without starting windings, suitable for various types of repulsion and repulsion-induction motors. • Winding diagram showing number of turns. • Connections of running and starting coils. 	<ul style="list-style-type: none"> • Task 53 • Task 54 <p><u>Details may be seen</u></p>

Motor Winding

		<ul style="list-style-type: none"> • Preparation of Slot insulation • Stripping the Winding • Making of former (thickness, length and width). • Winding the Coils • Lashing and Connecting • Testing the Concentric Winding • Distributed wind and concentric wind. • Type of wind (Distributed, pin, skein) 	
Week 9	Three-phase Stators and market integration. ➤ Success Story (For further detail please see Page No: 4 & 5)	Practice in term of windings <ul style="list-style-type: none"> • Distributed or Basket Wind • Winding a Basket Coil • Distributed or basket wind. (Single layer; Two-layer wind). • Consequent Connection • Three-phase Testing • Importance of market integration • Frame sound price policies • Development proper procurement and purchase strategies • Controversy between marketed and marketable surplus 	<ul style="list-style-type: none"> • Task 55 • Task 56 <p><i>Details may be seen at <u>Annexure-I</u></i></p>
Week 10	➤ Universal Motors ➤ Motivational Lecture (For further detail please see Page No: 4 & 5)	<ul style="list-style-type: none"> • Winding Small Armatures • Lap-wind armature. (Schematic; simplified). • Insulating the Slots • Methods of Lap-winding • The loop wind. • Fitting the Commutator • Cleaning the Leads • Metal strippers; fibre strippers with 'wet-and-dry' stuck on the ends. • Twisting leads together. • Fixing wires into a commutator • Armature Winding • Armature Testing • The Volt-drop Test • The Earth Test 	<ul style="list-style-type: none"> • Task 57 • Task 58 • 2nd monthly test <p><i>Details may be seen at <u>Annexure-I</u></i></p>
	Introduction to Freelancing	<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 freelancing 	

		<ul style="list-style-type: none"> • 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 <p>the process of creating a freelancing profile</p>	
Week 11	How to search and apply for jobs in at least two labor marketplace countries (KSA, UAE, etc.)	<p>Motivational Lecture (For further detail please see Page No: 3& 4)</p> <ul style="list-style-type: none"> • Browse the following website and create an account on each website <ul style="list-style-type: none"> ✓ Bayt.com – The Middle East Leading Job Site ✓ Monster Gulf – The International Job Portal ✓ Gulf Talent – Jobs in Dubai and the Middle East • 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 <p>Industry</p>	<ul style="list-style-type: none"> • Task 59 <i><u>Details may be seen at Annexure-I</u></i>

Week 12	Entrepreneurship and Final Assessment in project ➤ Success stories (For further detail please see Page No: 3& 4)	<ul style="list-style-type: none"> • 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.) • 	<ul style="list-style-type: none"> • Task 60 <i>Details may be seen at Annexure-I</i>
	HUMAN RESOURCE MANAGEMENT IN ELECTRICAL POWER ➤ Success Story <i>(For further detail please see Page No: 4 & 5)</i>	<ul style="list-style-type: none"> • Self-evaluation; Introduction & significance of HR Recruitment and Selection; Training and Development; Performance management and Appraisal;	
	Final Assessment		

Tasks For Certificate in Motor Winding

Annexure-I

Task No.	Task	Description	Week
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Motor Winding

1.	Health And safety	<ul style="list-style-type: none"> • Use and wearing of Personal protective equipment • safety precautions when working with electricity 	Week 1
2.		<ul style="list-style-type: none"> • Identify the tools and Use of tools and equipment • Identify hazards associated with electricity 	
3.		<ul style="list-style-type: none"> • Identify safety signs, symbols and regulations • 	
4.	Electrical Theory	<ul style="list-style-type: none"> • Describe factors affecting resistance of conductors • 	Week 2
5.		<ul style="list-style-type: none"> • Calculate electrical quantities in DC circuits based on Ohm's Law 	
6.		<ul style="list-style-type: none"> • Series and parallel and combination series and parallel Circuit and its calculation • 	
7.		<ul style="list-style-type: none"> • Identification of millimeter inch, feet, millimeter, meter • 	
8.		<ul style="list-style-type: none"> • Identification and using of micrometer 	
9.		<ul style="list-style-type: none"> • Identification and using of Vanier clipper 	
10.		<ul style="list-style-type: none"> • Uses of Multi meter • Measure current • Measure voltage • Measure Resistance • Continuity test 	
11.		<ul style="list-style-type: none"> • Functioning of oscilloscope 	
12.		<ul style="list-style-type: none"> • Hertz meter 	
		Testing and Troubleshooting of Motor-I & II	
13.	<ul style="list-style-type: none"> • Mechanical fault finding 		
14.	<ul style="list-style-type: none"> • Magnetic fault finding 		
15.			
16.	<ul style="list-style-type: none"> • Common tests to locate faults in A.C Motors Stator 		
17.	<ul style="list-style-type: none"> • Short circuit between phase winding /between coil between group 		
18.		<ul style="list-style-type: none"> • Grounded winding test 	

19.		<ul style="list-style-type: none"> • Testing of induction motor 	
20.		<ul style="list-style-type: none"> • Common tests to locate faults in D.C Motors Armature 	
21.		<ul style="list-style-type: none"> • Common tests to locate faults in D.C Motors field coil 	
22.		<ul style="list-style-type: none"> • Testing Method 	
23.		<ul style="list-style-type: none"> • Remove faults 	
24.		<ul style="list-style-type: none"> • Explain the reason for short circuit and leakage current 	
25.		<ul style="list-style-type: none"> • Identify the fault finding techniques 	
26.	Repairing and Maintenance Of Motor winding	<ul style="list-style-type: none"> • Preventive maintenance 	Week 04
27.		<ul style="list-style-type: none"> • Scheduled maintenance 	
28.		<ul style="list-style-type: none"> • Replacement of bearing 	
29.		<ul style="list-style-type: none"> • Replacement of shaft 	
30.		<ul style="list-style-type: none"> • Replacement of side cover 	
31.		<ul style="list-style-type: none"> • Replacement of fan 	
32.		<ul style="list-style-type: none"> • Replacement of commutator 	
33.		<ul style="list-style-type: none"> • Replacement of Corban 	
34.		<ul style="list-style-type: none"> • Replacement of fan 	
35.		<ul style="list-style-type: none"> • Replacement of commutator 	
36.	<ul style="list-style-type: none"> • Replacement of Corban brush 		
37.	Demonstrate Winding Series, Repulsion, Repulsion-induction	<ul style="list-style-type: none"> • Winding Series, Repulsion, Repulsion-induction and Repulsion-start Induction-run Armatures • Lap and Wave Winds • The Former Wind • The Random-wound Former Coil • various shapes of armature slots 	
38.	DC motor-I Rewinding of Armature winding	<ul style="list-style-type: none"> • Developing Lap winding diagram for given armature if a motor having 4-pole, 24 conductor. <ul style="list-style-type: none"> I. Calculate pole pitch II. Front pitch III. Back pitch IV. Commutator pitch 	Week 05
39.		<ul style="list-style-type: none"> • Develop single layer lap winding 4-pole having 24 conductor 	
40.		<ul style="list-style-type: none"> • Develop equivalent ring winding single layer lap winding 4-pole having 24 conductor 	

Motor Winding

41.		<ul style="list-style-type: none"> • Develop equivalent ring winding double layer lap winding 4-pole having 24 conductor 	
42.		<p>Develop and calculate winding factor lap winding for given armature having 4-pole and 24 conductors.</p> <ul style="list-style-type: none"> • Pitches of winding <ol style="list-style-type: none"> I. Back pitch II. front pitch III. pole pitch IV. commutator • Prepare a winding table regarding back pitch and front pitch • Setup the drawing sheet on drawing table • Draw 24 vertical lines at equal distance according to the number of conductor and mark number at lines 1-24. • Write front pitch with its value on commutator side (lower side) and similarly write back pitch with its value on the upper side • Now start to make connection from the first conductor of the first coil. • For back connection, add the value of back pitch in conductor 1. Its mean that the conductor 1 is connected with conductor 8. • Now, subtract the value of front pitch from conductor 8. Its mean that the conductor 8 is connected with conductor 3. • For back connection, add the value of back pitch in conductor 3. Its mean that the conductor 3 is connected with conductor 10. • Now, subtract the value of front pitch from conductor 10. Its mean that the conductor 10 is connected with conductor 5. • Continue unit connections of all conductor are completed. Hence the winding closed 	

Motor Winding

		<p>upon itself.</p> <ul style="list-style-type: none"> • Spread the commutator segment in layers and connect the winding conductor on the front side. • Now locate the position of poles. Set the direction of emf generated or current in the conductors under the influence of N-pole downwards and set the direction of emf generated or current in the conductors under the influence of S-pole upwards, the reason is that the armature is rotating constantly and due to change in direction of rotation, the direction of emf or current in N-poles also reverse. • For easy understanding before rewinding draw the ring winding equivalent circuit. • From equivalent ring diagram, it is seen that point W is the separating point of the emf included in the two portions of the winding. Hence, this fixes the position of the negative brush. But as it is at the back and not at the commutator end of the armature, the negative brush has two alternative position i.e. either at point U and v. These points on the equivalent diagram correspond to commutator segments E and L. • At the end, brushes of the same polarity (positive, positive and negative, negative) are connected together, then all the armature conductor are divided into four parallel paths. 	
43.		<ul style="list-style-type: none"> • Developing wave winding diagram for given armature if a motor having 4-pole, 26 conductor. <ul style="list-style-type: none"> I. Calculate pole pitch 	

		II. Front pitch III. Back pitch • Commutator pitch	
44.		• Develop single layer wave winding 4-pole having 26 conductor	
45.		• Develop equivalent ring winding double layer wave winding 4-pole having 26 conductor	
46.		Develop and calculate winding factor wave winding for given armature having 4-pole and 26 conductors • Pitches of winding V. Back pitch VI. front pitch VII. pole pitch VIII. commutator • Prepare a winding table regarding back pitch and front pitch • Setup the drawing sheet on drawing table • Draw 26 vertical lines at equal distance according to the number of conductor and mark number at lines 1-26. • Write front pitch with its value on commutator side (lower side) and similarly write back pitch with its value on the upper side • Now start to make connection from the first conductor of the first coil. • For back connection, add the value of back pitch in conductor 1. Its mean that the conductor 1 is connected with conductor 6. • Now, add the value of front pitch from conductor 6. Its mean that the conductor 6 is connected with conductor 13. • For back connection, add the value of back pitch in conductor 13. Its mean that the conductor 13 is connected with conductor 18.	

		<ul style="list-style-type: none"> • Now, add the value of front pitch from conductor 18. Its mean that the conductor 18 is connected with conductor 25. • Continue unit connections of all conductor are completed. Hence the winding closed upon itself. • Spread the commutator segment in layers and connect the winding conductor on the front side. • Now locate the position of poles. Set the direction of emf generated or current in the conductors under the influence of N-pole downwards and set the direction of emf generated or current in the conductors under the influence of S-pole upwards, the reason is that the armature is rotating constantly and due to change in direction of rotation, the direction of emf or current in N-poles also reverse. • For easy understanding before rewinding draw the ring winding equivalent circuit. • From equivalent ring diagram, it is seen that point W is the separating point of the emf included in the two portions of the winding. Hence, this fixes the position of the negative brush. But as it is at the back and not at the commutator end of the armature, the negative brush has two alternative position i.e. either at point U and v. These points on the equivalent diagram correspond to commutator segments E and L. • At the end, brushes of the same polarity (positive, positive and negative, negative) are connected together, then all the 	
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Motor Winding

		armature conductor are divided into four parallel paths.	
47.	DC Motor-II Rewinding of Field coil	DC motor winding techniques <ul style="list-style-type: none"> • Winding D.C. Shunt Fields • Making the Former and Rewinding the Coil • Winding Series Fields • Inter poles • Compound Fields • Winding Techniques • Armature Winding • Structure of value chains; Value chain actors and service providing institutions. 	Week 6
48.			
49.			
50.	Demonstrate Coil Winding	<ul style="list-style-type: none"> • Simple coil-winding rig-up using lathe and rev-counter. • Simple Winding Machine 	Week 7
51.	Methods of Speed Control	<ul style="list-style-type: none"> • Simple form of swash-plate drive to obtain infinitely variable ratio between limits. • Compound swash-plate drive 	
52.	Layout for heavy winding head	<ul style="list-style-type: none"> • Typical Winding Machines • Tension device • Effect of winding heavy circular of rectangular conductor on small former • Showing wide angle phase when winding coils with two heavy conductors in parallel 	
53.	➤ Demonstrate Single-phase Stators.	<ul style="list-style-type: none"> • Obtaining the Winding Diagram • Normal arrangement of coils for a single-phase stator • Similar arrangement, without starting windings, suitable for various types of repulsion and repulsion-induction motors. • Winding diagram showing number of turns. 	Week 8
54.	Preparation of slot insulation, lashing, coils and testing of windings	<ul style="list-style-type: none"> • Connections of running and starting coils. • Preparation of Slot insulation • Stripping the Winding • Making of former (thickness, length and width. • Winding the Coils • Lashing and Connecting • Testing the Concentric Winding • Distributed wind and 	

Motor Winding

		<ul style="list-style-type: none"> concentric wind. Type of wind (Distributed, pin, skein). 	
55.	Demonstrate Three-phase Stators	<ul style="list-style-type: none"> Understand Distributed or Basket Wind Winding a Basket Coil Distributed or basket wind. (Single layer; Two-layer wind). Consequent Connection Show Three-phase Testing 	Week 9
56.	Explore market integration.	<ul style="list-style-type: none"> Analyze importance of market integration Frame sound price policies Development proper procurement and purchase strategies Controversy between marketed and marketable surplus 	
57.	Demonstrate Universal Motors	<ul style="list-style-type: none"> Winding Small Armatures Lap-wind armature. (Schematic; simplified). Insulating the Slots Methods of Lap-winding The loop wind. Fitting the Commutator Cleaning the Leads 	Week 10
58.	Fixing and testing of universal motor	<ul style="list-style-type: none"> Metal strippers; fiber strippers with 'wet-and-dry' stuck on the ends. Twisting leads together. Fixing wires into a commutator Consider armature Winding Consider armature Testing The Volt-drop Test The Earth Test 	
59.	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 Uv learning jobs Paper Pk Read news paper Bayt.com Monster Gulf Gulf Talent online job search websites 	Week 11
	Step wise procurement of business.	<ul style="list-style-type: none"> Demonstrate basic knowledge of business. Consider any kind of business. Check its market value 	

		<ul style="list-style-type: none"> • Devise steps that facilitate your product to consumer. 	
	Status of planning before running any business.	<ul style="list-style-type: none"> • Consider yourself as owner • Focus on market activities. • Take opinion from business master. • Make business plan. • Present your plan to any organization who will facilitate you financially. • Evaluate all future challenges. 	
	Search out top 5 Electrical motor manufacturer which have efficient sources of capital for entrepreneurship.	<ul style="list-style-type: none"> • Google the Motor manufacturer. • Find out 5 Motor manufacturer. • Check their sources of capital. • Estimate their input and outputs. • Analyze their debt and credit. 	
60.	Predict Scope and importance entrepreneurship.	<ul style="list-style-type: none"> • Understand different majors of electrical power motor. • Check the status of electrical motor winding in economy. • Assess different sectors of electrical motor sector. • 	Week 12
	Impact of motor winding market development.	<ul style="list-style-type: none"> • Pick out any electrical market. • Check outputs and inputs. • Analyze the flow of goods in market. 	
	How can we promote motor winding entrepreneurship?	<ul style="list-style-type: none"> • Find out any 3-motor winding center. • Select best one according to you. • Evaluate ways to promote that business. • 	

Motor Winding Bussines

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

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

Motor Winding

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>

Annexure-II

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.• Understand what	<ul style="list-style-type: none">• Podium• Projector• Computer• Flip Chart• Marker		<ul style="list-style-type: none">• Communication• Self Confidence• Teamwork

Motor Winding

<p>communication skills mean</p> <ul style="list-style-type: none"> • Understand what skills are important for communication skills 		
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Schedule	Mentor Should do
<p>Welcome: 5 min</p>	<p>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.</p>
<p>Icebreaker: 10 min</p>	<p>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.</p>
<p>Introduction & Onboarding: 20mins</p>	<p>Provide a brief introduction of the qualification to the class and play the “Onboarding Video or Presentation”. In your introduction cover the following:</p> <ol style="list-style-type: none"> 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.
<p>Team Activity Planning: 30 minutes</p>	<p>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.</p> <ul style="list-style-type: none"> • “IDENTIFY ENTREPRENEURS” TEAM

Motor Winding

	<p style="text-align: center;">ACTIVITY</p> <ul style="list-style-type: none"> • “BRAINSTORMING SOCIAL PROBLEMS” TEAM ACTIVITY <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.</p> <p>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>

MOTIVATIONAL LECTURES LINKS.

TOPIC	SPEAKER	LINK
How to Face Problems In Life	Qasim Ali Shah	https://www.youtube.com/watch?v=OrQte08MI90
Just Control Your Emotions	Qasim Ali Shah	https://www.youtube.com/watch?v=JzFs_yJt-w
How to Communicate Effectively	Qasim Ali Shah	https://www.youtube.com/watch?v=PhHAQEGehKc
Your ATTITUDE is Everything	Tony Robbins Les Brown David Goggins Jocko Willink Wayne Dyer Eckart Tolle	https://www.youtube.com/watch?v=5fS3rj6eIFg
Control Your EMOTIONS	Jim Rohn Les Brown TD Jakes Tony Robbins	https://www.youtube.com/watch?v=chn86sH005U
Defeat Fear, Build Confidence	Shaykh Atif Ahmed	https://www.youtube.com/watch?v=s10dzfbozd4
Wisdom of the Eagle	Learn Kurooji	https://www.youtube.com/watch?v=bEU7V5rJTtw
The Power of ATTITUDE	Titan Man	https://www.youtube.com/watch?v=r8LJ5X2ejqU
STOP WASTING TIME	Arnold Schwarzenegger	https://www.youtube.com/watch?v=kzSBrJmXqdg
Risk of Success	Denzel Washington	https://www.youtube.com/watch?v=tbnzAVRZ9Xc

SUCCESS STORY

S. No	Key Information	Detail/Description
1.	Self & Family background	<p>Ishaq, who lives in Lahore, is an example of how hard work and perseverance can reap rich rewards when bidding for projects online.</p> <p>Motor winder works exclusively on a local market oriented platform and has earned, on average, 50,000 per month for the past several months. But this isn't a story of overnight success – Ishaq has had to work hard to differentiate himself and stay true to his goal.</p> <p>It was a full year later, in November 2020, when Ishaq finally decided to jump in local market and sign multiple agreements. He signed up for one of the numerous landowners and people with small projects, like handling Motor winding and motor control related issues. 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 Agribusiness from STEPS(NAVTTC partner institute)
3.	Post-training activities	<p>Ishaq's area of expertise is in Motor winding. 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 agribusiness men. It was an uphill struggle, but I didn't want to give up," he explains.</p> <p>Ishaq says he understands why clients would be apprehensive giving projects to untested motor winder men. 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 Ishaq's way. Within a few months, he was landing an average of a</p>

		<p>multiple projects every month, with a large number of repeat clients. He also expanded the range of his professional services, branching out landowners to companies.</p> <p>But he's had to face his fair share of challenges too. Lahore, threatened to derail his motor winder career. "Sometimes I haven't had connectivity for two days straight," he explains. "That's unthinkable for someone who makes his livelihood on the Motor winder."</p>
4.	<p>Message to others (under training)</p>	<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.