Curriculum
For
Aluminum Fabricator
6 –Months

Code: VD33S001

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Introduction

Overall objective of course

Aluminum Fabrication is the widely known occupation of the construction sector. The advancement and development of technology has upgraded the functions and processes involved in the job of an Aluminum Fabricator. Therefore, the objective of this course is to impart latest skills and knowledge to trainees keeping in view the demand of the industry. The course mostly focuses on practical skills which is aided by some theory as it is necessary for understanding the procedures and processes of performing different tasks and functions.

The curriculum covers the major topics of hand operation i.e. cutting filling, drilling, punching, screwing riveting techniques along with measuring and marking of objects, estimation and basic mathematical calculations and necessarily required theoretical knowledge alongwith technical drawing.

Curriculum Salient

Name of course:	Aluminum Fabricator	
Entry level:	Middle / Matric	
Duration of course:	Six Month (11 Modules)	
Training hours :	800 hours	
	40 hours / week	
	7 hours per day (Friday 5 hours.)	
Training methodology:	Practical	80%
	Theory	20%
Medium of instruction :	Urdu / English	

Competencies gained after completion of course

Knowledge/Skill Proficiency Details:

On successful completion of course, the trainee should be able to:

1. Explain the properties of aluminum, different series, their sections and thickness.
2. Explain the measuring tools
3. Explain the different angles / shapes and sizes of aluminum sections.
4. Explain type of aluminum products and their uses.
5. Prepare general drawing, understanding of sketches and define the location.
6. Calculate the basic mathematical entities.
7. Estimate the product material requirements.
8. Use the hand tools and machine safely and properly.
9. Adopt and comply with the ethical values.
10. Observe safety precaution and first aid and fire fighting education
11. Measure door frame, door panel, window frame, window panel, Partition, glass/board, curtain wall, cladding sheets etc.
12. Perform cutting of material as per measurement.
13. Perform drilling
14. Perform filing
15. Perform punching
16. Perform screwing and riveting.
17. Prepare casement window frame and panel, open able windows, fix windows, double panel sliding windows and its panel, multi panel sliding window, sliding window panel with fly mesh.
18. Prepare flush door panel and frames, swing door panel and frame, glass door panel, revolving door.
19. Prepare fix half partition, full partition, fix partition with flush door fix partition of casement section, fix partition with sliding door.
20. Install flush door frame, panel, swing door, casement window frame, panel, sliding window frame and panel, fly screen / mesh, shower cabin.
21. Perform finishing, clipping, gasket.
22. Perform silicon filling.

Job opportunities available immediately and in future

The pass outs of this course may find job / employment opportunities in the following areas:

1. Aluminum door and windows manufacturing workshop.
2. Aluminum product manufacturing factory.
3. Own workshop / Self Employment.

Overview about the Program

Module Title and Aim	Learning Units	Theory Days/hrs	Workplace Days/hrs	Timeframe of Module
Module 1 Perform Measurements	1.1 Measure Door frame 1.2 Measure Door Panel 1.3 Measure window frame 1.4 Measure window panel 1.5 Measure partition 1.6 Measure Ceiling 1.7 Measure glass / board 1.8 Measure curtain wall 1.9 Measure cladding sheets 1.10 Resolve discrepancies in measurement 1.11 Estimate material requirements	12	66	78
Module 2 Perform Bench Work	2.1 Perform cutting 2.2 Perform drilling 2.3 Perform filing 2.4 Perform punching 2.5 Perform screwing 2.6 Perform riveting	15	58	73
Module 3 Make Windows	3.1 Make casement window frame 3.2 Make casement window panel 3.3 Make open able windows 3.4 Make fix windows 3.5 Make double panel sliding window frame 3.6 Make multi panel sliding 3.7 Make sliding window 3.8 Make sliding window panel with fly mesh	17	60	77
Module 4 Make Doors	4.1 Make flush door frame 4.2 Make flush door panel 4.3 Make swing door frame 4.4 Make swing door panel 4.5 Make glass door panel 4.6 Make revolving door	15	58	73

Module 5 Make Fix Partition	5.1 Fix half Partition 5.2 Fix full partition 5.3 Fix partition with flush door 5.4 Fix partition of casement section 5.5 Fix partition with sliding door	12	52	64
Module 6 Perform Installation	6.1 Install flush door frame 6.2 Install flush door panel 6.3 Install swing door 6.4 Install casement window frame 6.5 Install casement window panel 6.6 Install sliding window frame 6.7 Install sliding window panel 6.8 Install fly screen/mesh 6.9 Install shower cabin	18	83	101
Module 7 Perform Finishing	7.1 Perform glass/board fitting 7.2 Perform clipping 7.3 Press gasket 7.4 Perform silicon fitting 7.5 Fit accessories 7.6 Perform cleaning	15	62	77
Module 8 Develop Professionalism	8.1 Read books/newspapers 8.2 Visit other sites 8.3 Learn from senior/supervisor 8.4 Attain training 8.5 Participate in workshops	12	52	64
Module 9 Perform Communication	9.1 Communicate with client/owner 9.2 Communicate with contractor 9.3 Communicate with senior/junior 9.4 Communicate with peers 9.5 Communicate with engineer/overseer 9.6 Communicate with	17	72	89

	electrician 9.7 Communicate with concerned office/stakeholder			
Module 10 Install Cladding Sheets	10.1 Perform pluming 10.2 Fit base channel 10.3 Bend sheets 10.4 Fix sheets 10.5 Ensure waterproofing	12	46	58
Module 11 Follow Safety Rules	11.1 Wear work clothes 11.2 Deal with work accidents and injuries 11.3 Inspect connections 11.4 Use fire extinguishers	15	31	46
Total		**160**	**640**	**800**

Curriculum Contents (Teaching and Learning Guide)

Module 1: **Perform Measurement**

Objective of the Module: To enable the trainee to be able to measure the Door frame/Panel window frame/Panel Partition, Ceiling, Glass/Board, Curtain Wall, Cladding Sheets, Resolve discrepancies in measurement , Estimate material requirements.

Duration: Total Hours: 78 hours Theory: 12 hours. Practice: 66 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
1.1 Measure Door frame	Select and use the Measuring tools for Door frame	**Knowledge of:** Measuring Units & tools **Ability to:** Use measuring tools for Proper measuring of door frame.	Th . 01Hrs Pract. 06 Hrs	Calculator, hand tool, measuring tool, spirit / water level, steel tape, steel rule, etc.	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
1.2 Measure Door Panel	Select and use the Measuring tools for Door Panel	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of door panel.	Th . 01Hrs Pract. 06Hrs		
1.3 Measure window frame	Select and use the Measuring tools for window frame	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of window frame	Th . 01Hrs Pract. 06Hrs		
1.4 Measure window panel	Select and use the Measuring tools for window panel	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of window panel	Th . 01Hrs Pract. 06 Hrs		
1.5 Measure partition	Select and use the Measuring tools for partition	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for	Th . 01Hrs Pract.		

		Proper measuring of partition	06 Hrs		
1.6 Measure ceiling	Select and use the Measuring tools for ceiling	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of ceiling	Th . 01Hrs Pract. 06 Hrs		
1.7 Measure glass / board	Select and use the Measuring tools for glass / board	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of glass / board	Th . 01Hrs Pract. 06Hrs		
1.8 Measure curtain wall	Select and use the Measuring tools for curtain wall	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of curtain wall	Th . 01Hrs Pract. 06Hrs		
1.9 Measure cladding sheets	Select and use the Measuring tools for cladding sheets	**Knowledge of:** Measuring tools **Ability to:** Use measuring tools for Proper measuring of cladding sheets	Th . 01Hrs Pract. 06Hrs		
1.10 Resolve discrepancies in measurement	Understand and Resolve discrepancies in measurement	**Knowledge of:** Discrepancies in measurement **Ability to:** Resolve discrepancies in measurement	Th . 01Hrs Pract. 06 Hrs		
1.11 Estimate material requirements	Perform calculation for estimation of material.	**Knowledge of:** requirement of material for a product. **Ability to:** Estimate the different types of material required for a product.	Th . 02Hrs Pract. 06Hrs		

Module 2: **Perform Bench Work**

Objective of the Module: To enable the trainee to be able to perform cutting, drilling, filing, punching, screwing and riveting of jobs.

Duration: Total Hours: 73 hours Theory: 15 hours. Practice: 58 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
2.1 Perform cutting	Perform cutting of material With hand hacksaw / cutting machine.	**Knowledge of:** Using hand hacksaw /Aluminum cutting machine **Ability to:** Cut material with hand hacksaw or cutting machine.	Th . 02 Hrs Pract. 10 Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, punching machine, Aluminum material.	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
2.2 Perform drilling	Perform drilling of material With hand drill / bench drill machine	**Knowledge of:** How to use bench drill machine / hand drill machine. **Ability to:** Drill the job with bench drill or hand drill machine as per requirement.	Th . 03Hrs Pract. 10Hrs		
2.3 Perform filing	Perform filing of material.	**Knowledge of:** Files, their sizes and grads. **Ability to:** Use file to remove small chips from edges for fitting.	Th . 02Hrs Pract. 08Hrs		
2.4 Perform punching	Perform punching of material with punching machine.	**Knowledge of:** Punching machine and process. **Ability to:** Use punching machine for required punching.	Th . 03Hrs Pract. 08Hrs		
2.5 Perform screwing	Perform screwing the job with screw drivers.	**Knowledge of:** Different types / sizes of screw drivers (flat /Philips type). **Ability to:** Use screw driver to tight the jobs and accessories.	Th . 02Hrs Pract. 12Hrs		

2.6 Perform riveting	Perform riveting with riveting gun.	**Knowledge of:** Rivet gun and its uses. **Ability to:** Use the rivet gun to assemble the job.	Th . 03Hrs Pract. 10Hrs		

Module 3: **Make Windows.**

Objective of the Module: To enable the trainee to be able to make casement window frame, casement window panel, open able windows, fix windows, double panel sliding window frame, multi panel sliding, sliding window and sliding window panel with fly mesh.

Duration: Total Hours: 77 hours Theory: 17 hours Practice: 60 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
3.1 Make casement window frame	Identify, design and fabricate the casement window frame.	**Knowledge of:** Casement window frame and material required for it. **Ability to:** Design and fabricate casement window frame.	Th . 02Hrs Pract. 06Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, punching machine, aluminum according to requirement	Theory in class room. Practical in related work shop. **Note:** Tools, Machinery and Equipment list is attached at end of curricula.
3.2 Make casement window panel	Identify, design and fabricate the casement window panel.	**Knowledge of:** Casement window panel and material required for it. **Ability to:** Design and fabricate casement window panel.	Th . 01Hrs Pract. 08Hrs		
3.3 Make open able window	Identify, design and fabricate the open able windows.	**Knowledge of:** Open able windows and material required for it. **Ability to:** Design and fabricate open able windows.	Th . 02Hrs Pract. 06Hrs		
3.4 Make fix windows	Identify, design and fabricate the fix windows	**Knowledge of:** Fix windows and material required for it. **Ability to:** Design and fabricate fix windows.	Th . 02Hrs Pract. 08Hrs		
3.5 Make double panel sliding window frame	Identify, design and fabricate the double panel sliding window frame.	**Knowledge of:** Double panel sliding window frame and material required for it. **Ability to:** Design and fabricate double panel sliding window frame.	Th . 02Hrs Pract. 08Hrs		
3.6 Make multi panel	Identify, design and fabricate the	**Knowledge of:** Multi panels sliding and material	Th . 02Hrs		

sliding	multi panel sliding	required for it. **Ability to:** Design and fabricate multi panels sliding.	Pract. 10Hrs		
3.7 Make sliding window	Identify, design and fabricate the sliding. Window	**Knowledge of:** Sliding window and material required for it. **Ability to:** Design and fabricate sliding window.	Th . 02Hrs Pract. 06Hrs		
3.8 make sliding window panel with fly mesh	Identify, design and fabricate the sliding. Window with fly mesh.	**Knowledge of:** Sliding window panel with fly mesh and material required for it. **Ability to:** Design and fabricate sliding window panel with fly mesh.	Th . 02Hrs Pract. 08Hrs		

Module 4: **Make Door.**

Objective of the Module: To enable the trainee to be able to make flush door frame, flush door panel, swing door frame, swing door panel, glass door panel and revolving door.

Duration: Total Hours: 73 hours Theory: 15 hours. Practice: 58 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
4.1 Make flush door frame	Identify, make and fabricate the flush door frame.	**Knowledge of:** Design of flush door frame and material required for it. **Ability to:** Make flush door frame.	Th . 02Hrs Pract. 10 Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, sprit / water level, punching machine, aluminum according to requirements.	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
4.2Make flush door panel	Identify, make and fabricate the flush door panel.	**Knowledge of:** Design of flush door panel and material required for it. **Ability to:** Make flush door panel.	Th . 03Hrs Pract. 10Hrs		
4.3 Make swing door frame	Identify, make and fabricate the swing door frame.	**Knowledge of:** Design of swing door frame and material required for it. **Ability to:** Make swing door frame.	Th . 02Hrs Pract. 08Hrs		
4.4 Make swing door panel	Identify, make and fabricate the swing door panel.	**Knowledge of:** Design of swing door panel and material required for it. **Ability to:** Make swing door panel.	Th . 03Hrs Pract. 08Hrs		
4.5 Make glass door panel	Identify, make and fabricate the glass door.	**Knowledge of:** Design of glass door panel and material required for it. **Ability to:** Make glass door panel.	Th . 02Hrs Pract. 12Hrs		

4.6 Make revolving door	Identify, make and fabricate the revolving door.	**Knowledge of:** Design of revolving door and material required for it. **Ability to:** Make revolving door.	Th . 03Hrs Pract. 10Hrs		

Module 5: **Fix Partition**

Objective of the Module: To enable the trainee to be able to fix half Partition**,** fix full partition**,** fix partition with flush door**,** fix partition of casement section and fix partition with sliding door**.**

Duration: Total: 64 hours Theory: 12 hours Practice: 52 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
5.1 Fix half Partition	Perform fixing of half partition.	**Knowledge of:** Aligning the half partition and use of water/ sprit level. **Ability to:** Align the half partition with water level fix with screws and rivets.	Th . 02Hrs Pract. 10Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, sprit / water level, punching machine.	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
5.2 Fix full partition	Perform fixing of full partition.	**Knowledge of:** Aligning the full partition and use of water/ sprit level. **Ability to:** Align the full partition with water level fix with screws and rivets.	Th . 03Hrs Pract. 10Hrs		
5.3 Fix partition with flush door	Perform fixing of partition with flush door	**Knowledge of:** Aligning the partition with flush door and use of water/ sprit level. **Ability to:** Align the partition with flush door with water level fixes screws and rivets.	Th . 02Hrs Pract. 10Hrs		
5.4 Fix partition of casement section	Perform fixing of partition with casement section	**Knowledge of:** Aligning the partition of casement section and use of water/ sprit level. **Ability to:** Align the partition of casement section with water level screws and rivets.	Th . 03Hrs Pract. 10Hrs		
5.5 Fix partition	Perform fixing of	**Knowledge of:** Aligning the partition of	Th . 02Hrs		

with sliding door	partition with sliding door	sliding door and use of water/ sprit level. **Ability to:** Align the partition of sliding door with water level screws and rivets.	Pract. 12Hrs		

Module 6: Perform Installation.

Objective of the Module: To enable the trainee to be able to install flush door frame, flush door panel, swing door, casement window frame, casement window panel, sliding window frame, sliding window panel, fly screen/mesh and shower cabin.

Duration: Total: 101 hours Theory: .....18 hours.. Practice: 83 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
6.1 Install flush door frame	Perform the installation of flush door frame.	**Knowledge of:** Installation of flush door frame aligns the frame with wall at right angle. Water level and its use. Required accessories. **Ability to:** Install the flush door frame, align the frame with wall at right angle by using water level and with required accessories.	Th . 02Hrs Pract. 08Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, sprit / water level, punching machine	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
6.2 Install flush door panel	Perform the installation of flush door panel.	**Knowledge of:** Installation of flush door panel, align with frame at right angle. Water level and its use. Required accessories. **Ability to:** Installation the flush door frame, align the panel with frame at right angle by using water level and set with required accessories.	Th . 01Hrs Pract. 09Hrs		
6.3 Install swing door	Perform the installation of swing door.	**Knowledge of:** Installation of swing door aligns with frame at right angle. Water level and its use. Required accessories. **Ability to:** Installation of swing door frame, align with frame at right angle by using water level and set with required accessories.	Th . 02 Hrs Pract. 10Hrs		

6.4 Install casement window frame	Perform the installation of casement window frame.	**Knowledge of:** Installation of casement window frame align the wall **Ability to:** Install the casement window frame align with the wall at right angle by using water level.	Th . 02Hrs Pract. 08Hrs		
6.5 Install casement window panel	Perform the installation of casement window panel.	**Knowledge of:** Accessories (hardware) use for casement window panel and fix it. **Ability to:** Fix the accessories and install the casement window panel with the frame.	Th . 02Hrs Pract. 10 Hrs		
6.6 Install sliding window frame	Perform the installation of sliding window frame.	**Knowledge of:** Installation of sliding window frame align the wall **Ability to:** Install the sliding window frame align with the wall at right angle by using water level.	Th . 03Hrs Pract. 10Hrs		
6.7 Install sliding window panel	Perform the installation of sliding window panel.	**Knowledge of:** Accessories (hardware) use for sliding window panel and fix it. **Ability to:** Fix the accessories and install the sliding window panel with the frame.	Th . 02Hrs Pract. 10Hrs		
6.8 Install fly screen/mesh	Perform the installation of fly screen / mesh.	**Knowledge of:** Accessories (hardware) use for fly screen/mesh and fix it. **Ability to:** Fix the accessories and install the fly screen/mesh with the frame.	Th . 02Hrs Pract. 10Hrs		
6.9 Install shower cabin	Perform the installation of shower cabin.	**Knowledge of:** Read the assembly drawing and apply it step by step.	Th . 02Hrs		

		Ability to: Install the shower cabin as per drawing.	Pract. 10Hrs		

Module 7: **Perform Finishing**

Objective of the Module: To enable the trainee to be able to perform glass/board fitting, clipping, Press gasket, silicon filling, Fit accessories and cleaning

Duration: Total: 77 hours Theory: 15 hours. Practice: 62 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
7.1 Perform glass/board fitting	Identify and fit the glass/board	**Knowledge of:** Handling of glass/board and place it. **Ability to:** Fit the glass (Glazing)/board at proper location and angle.	Th . 02Hrs Pract. 10Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, punching machine, gasket, silicon, fitting accessories, cleaning material and tools.	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
7.2 Perform clipping	Identify clipping	**Knowledge of:** Clipping. **Ability to:** Perform clipping.	Th . 03Hrs Pract. 10Hrs		
7.3 Press gasket	Identify , fix and press the gasket	**Knowledge of:** Press gasket. **Ability to:** Fix the gasket at proper location.	Th . 02Hrs Pract. 10Hrs		
7.4 Perform silicon filling	Fill the silicon as per requirements	**Knowledge of:** Silicon and use of silicon gun. **Ability to:** Apply silicon with gun as per requirement.	Th . 03Hrs Pract. 10Hrs		
7.5 Fit accessories	Identify fitting of accessories	**Knowledge of:** Accessories required as per product. Calculate Drill size for Tapping **Ability to:** Fix the accessories at proper place including tapping.	Th . 02Hrs Pract. 12Hrs		
7.6 Perform cleaning	Clean the product properly	**Knowledge of:** Cleaning.	Th . 03Hrs		

		Ability to: Clean the job with proper tools.	Pract. 10Hrs		

Module 8: Develop Professionalism

Objective of the Module: To enable the trainee to be able to Read books/newspapers, Visit other sites, Learn from senior/supervisor, Attain training and Participate in workshops

Duration: Total: 64 hours Theory: 12 hours. Practice: 52 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
8.1 Read books/ newspapers	Identify the relevant books and read these books & newspapers.	**Knowledge of:** Relevant books & newspapers & concerned area of interest. **Ability to:** Find relevant information. Visit library and read relevant information.	Th . 02Hrs Pract. 10Hrs	Newspaper Computer Relevant books, etc.	Theory in class room. Practical in related work shop/ Library/ Computer Lab.
8.2 Visit other sites	Select the relevant sites and get permission from the concerned. Visit the selected sites	**Knowledge of:** Relevant sites. Select the site and get permission of concerned person. **Ability to:** Perform visit and observe relevant skills.	Th . 03Hrs Pract. 10Hrs		
8.3 Learn from senior/ supervisor	Get knowledge and skill from his senior/ supervisor.	**Knowledge of:** Dealing with senior and to take information from senior. **Ability to:** Take up information and skill from senior Observe the method and techniques used by senior/supervisor. Learn from External Expert.	Th . 02Hrs Pract. 10Hrs		
8.4 Attain training	Identify the area and location of training to be needed and participate in training.	**Knowledge of:** Area of training to be required. Location of premises of training. **Ability to:** Highlight the deficient area. Locate the premises of training. Get the training in relevant area from relevant premises.	Th . 03Hrs Pract. 10Hrs		

8.5 Participate in workshops	Get the information about relevant workshop and participate in it to enhance skills	**Knowledge of:** Subject of workshops. Location of area. **Ability to:** Get nomination to participants in workshop. Participants to enhance ability.	Th . 02Hrs Pract. 12Hrs		

Module 9: **Perform Communication**

Objective of the Module: To enable the trainee to be able to communicate with client/owner, Communicate with contractor, Communicate with senior/junior, Communicate with peers, Communicate with engineer/overseer Communicate with electrician, .and Communicate with concerned office/stakeholder.

Duration: Total: 89 hours Theory: 17hours. Practice: 72 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
9.1 Communicate with client/ owner	Understand the communicatio n skill and communicate with owner	**Knowledge of:** Communication technique and communications skill. **Ability to:** Communicate with client / owner verbally or through documents to perform communication. Exercise among participants.	Th . 02Hrs Pract. 10Hrs	Books about commun ication.	Theory in class room. Practical in related Lab.
9.2 Communicate with contractor	Recognize the position of contractor and communicate accordingly.	**Knowledge of:** Verbal communication, channel of communication and written communication. **Ability to:** Communicate verbally according to the status of contractor, select the suitable channel and communicate in written.	Th . 02Hrs Pract. 10Hrs		
9.3 Communicate with senior/junior	Understand the communicatio n skill and communicate with senior/junior	**Knowledge of:** Verbal communication, channel of communication and written communication. **Ability to:** Communicate verbally according to the status of senior/junior, select the suitable channel and communicate in written.	Th . 03Hrs Pract. 10Hrs		
9.4 Communicate with peers	Understand the communication skill and communicate with peers	**Knowledge of:** Verbal communication, channel of communication and written communication. **Ability to:** Communicate verbally according to the status of peers, select the	Th . 02Hrs Pract. 10Hrs		

		suitable channel and communicate in written.			
9.5 Communicate with engineer/ overseer	Understand the communication skill and communicate with engineer/ overseer	**Knowledge of:** Verbal communication, channel of communication and written communication. **Ability to:** Communicate verbally according to the status of engineer/overseer, select the suitable channel and communicate in written.	Th . 03Hrs Pract. 10Hrs		
9.6 Communicate with electrician	Understand the communication skill and communicate with electrician	**Knowledge of:** Verbal communication, channel of communication and written communication. **Ability to:** Communicate verbally according to the status of electrician, select the suitable channel and communicate in written.	Th . 02Hrs Pract. 12Hrs		
9.7 Communicate with concerned office/ stakeholder	Understand the communication skill and communicate with office/ stakeholder	**Knowledge of:** Verbal communication, channel of communication and written communication. **Ability to:** Communicate verbally according to the status of office/stakeholder, select the suitable channel and communicate in written.	Th . 03Hrs Pract. 10Hrs		

Module 10: **Install Cladding Sheets**

Objective of the Module: To enable the trainee to be able to perform pluming, fit base channel, Bend sheets, Fix sheets and ensure waterproofing

Duration: Total: 58 hours Theory: 12 hours. Practice: 46 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
10.1 Perform pluming	Identify the pluming operation.	**Knowledge of:** Pluming tools and their uses **Ability to:** Use pluming tools as per requirement.	Th . 02Hrs Pract. 10Hrs	Calculator, hand tool, measuring tool, aluminum cutting machine, drill machine, sprit / water level, punching machine, bending machine	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
10.2 Fit base channel	Ability to fit the base channel	**Knowledge of:** Aligning straight and on 180 degree. **Ability to:** Set and fit the base channel.	Th . 03Hrs Pract. 10Hrs		
10.3 Bend sheets	Identify and perform the Bend sheets operation.	**Knowledge of:** Using bending machine. **Ability to:** Bend the sheet according to size and requirement.	Th . 02Hrs Pract. 08Hrs		
10.4 Fix sheets	Perform the fixing sheet operation.	**Knowledge of:** Fixing the sheets. **Ability to:** Fix the sheets.	Th . 03Hrs Pract. 08Hrs		
10.5 Ensure waterpro ofing	Identify the waterproofing operation.	**Knowledge of:** Waterproofing material and its use. **Ability to:** Apply the waterproofing material.	Th . 02Hrs Pract. 10Hrs		

Module 11: **Follow Safety Rules**

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Objective of the Module: To enable the trainee to be able to Wear work clothes, Deal with work accidents and injuries, Inspect connections and Use fire extinguishers.

Duration: Total: 46 hours Theory: .....15 hours.. Practice: 31 hours

Learning Unit	Learning Outcomes	Learning Elements	Duration	Materials Required	Learning Place
11.1 Wear work clothes	Understand the importance of work shop uniform and safety shoes.	**Knowledge of:** Work shop clothes not too loose nor tight, don't wear ring and watch during work. **Ability to:** Protect him from accidents.	Th . 04 Hrs Pract. 08 Hrs	First aid box, fire extinguishers, inspection tools, safety material.	Theory in class room. Practical in related work shop. Note: Tools, Machinery and Equipment list is attached at end of curricula.
11.2 Deal with work accidents and injuries	Identify the first aid box and use it at the time of requirement.	**Knowledge of:** Use of first aid for small accidents and injuries. **Ability to:** Deal with minor accidents and injuries Use first aid bandage with medicine.	Th . 03Hrs Pract. 08Hrs		
11.3 Inspect connections	Familiar with electrical connections.	**Knowledge of:** Electrical connection. **Ability to:** Check and repair connection.	Th . 04Hrs Pract. 08Hrs		
11.4 Use fire extinguishers	Ability to use fire extinguishers at the time of requirement.	**Knowledge of:** Use of fire extinguishers. **Ability to:** Use at the time of fire in the work shop.	Th . 04 Hrs Pract. 07Hrs		

Assessment Template

Module 1: Perform Measurements

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
1.1 Measure Door frame	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of door frame.	Short answer questions Direct Observation	
1.2 Measure Door Panel	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of door panel.	Short answer questions Direct Observation	
1.3 Measure window frame	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of window frame.	Short answer questions Direct Observation	
1.4 Measure window panel	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of window panel.	Short answer questions Direct Observation	
1.5 Measure partition	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of partition.	Short answer questions Direct Observation	
1.6 Measure ceiling	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of ceiling.	Short answer questions Direct Observation	
1.7 Measure glass / board	20min.	02Hours	Explain the name of Measuring tool and their uses. Demonstrate measuring of glass / board.	Short answer questions Direct Observation	

1.8 Measure curtain wall	20min.	02Hours	Explain the name of Measuring tool and Their uses. Demonstrate measuring of curtain wall.	Short answer questions Direct Observation	
1.9 Measure cladding sheets	20min.	02Hrs	Explain the name of Measuring tool and their uses. Demonstrate measuring of cladding sheet.	Short answer questions Direct Observation	
1.10 Resolve discrepancies in measurement	20min.	02Hrs	Explain discrepancies in measurement. Resolve discrepancies in measurement .	Short answer questions Direct Observation	
1.11 Estimate material requirements	20min.	02Hrs	Calculate the material required for each job.	Short answer questions Direct Observation	

Module 2: Perform Bench Work

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
2.1 Perform cutting	20min.	02Hrs	Knowledge of using hand hacksaw /Aluminum cutting machine. Demonstrate to cut material with hand hacksaw or cutting machine.	Short answer questions Direct Observation	
2.2 Perform drilling	20min.	02Hrs	Knowledge of how to use bench drill machine / hand drill machine. Demonstrate to drill the job with bench drill or hand drill machine as per requirement.	Short answer questions Direct Observation	
2.3 Perform filing	20min.	02Hrs	Knowledge of files, their sizes and grads. Demonstrate to use file to remove small chips from edges for fitting.	Short answer questions Direct Observation	
2.4 Perform punching	20min.	02Hrs	Knowledge of punching machine. Ability to use punching machine for required punching.	Short answer questions Direct Observation	
2.5 Perform screwing	20min.	02Hrs	Knowledge of different types / sizes of screw drivers (flat /Philips type). Demonstrate to use screw driver to tight the jobs and accessories.	Short answer questions Direct Observation	
2.6 Perform riveting	20min.	02Hrs	Knowledge of rivet gun and its uses. Demonstrate to use the rivet gun to assemble the job.	Short answer questions Direct Observation	

Module 3: Make Windows

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
3.1 Make casement window frame	20min.	02Hrs	Explain the making of casement window frame. Demonstrate the making of casement window frame	Short answer questions Direct Observation	
3.2 Make casement window panel	20min.	02Hrs	Explain the making of casement window panel. Demonstrate the making of casement window panel.	Short answer questions Direct Observation	
3.3 Make open able windows	20min.	02Hrs	Explain the making of open able window. Demonstrate the making of open able window.	Short answer questions Direct Observation	
3.4 Make fix windows	20min.	02Hrs	Explain the making of fix windows. Demonstrate the making of fix windows	Short answer questions Direct Observation	
3.5 Make double panel sliding window frame	20min.	02Hrs	Explain the making of double panel sliding window frame. Demonstrate the making of double panel sliding window frame.	Short answer questions Direct Observation	
3.6 Make multi panel sliding window.	20min.	02Hrs	Explain the making of multi panel sliding window. Demonstrate the making of multi panel sliding window.	Short answer questions Direct Observation	
3.7 Make sliding window	20min.	02Hours	Explain the making of sliding window. Demonstrate the making of sliding window.	Short answer questions Direct Observation	
3.8 Make sliding window panel with fly mesh	20min.	02Hours	Explain the making of sliding window panel with fly mesh Demonstrate the making of sliding window panel with fly mesh.	Short answer questions Direct Observation	

Module 4: Make Door

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
4.1 Make flush door frame	20min.	02Hours	Explain the making of flush door frame Demonstrate the making of flush door frame	Short answer questions Direct Observation	
4.2Make flush door panel	20min.	02Hours	Explain the making of flush door panel Demonstrate the making of flush door panel.	Short answer questions Direct Observation	
4.3 Make swing door frame	20min.	02Hours	Explain the making of swing door frame. Demonstrate the making of swing door frame.	Short answer questions Direct Observation	
4.4 Make swing door panel	20min.	02Hours	Explain the making of swing door panel. Demonstrate the making of swing door panel	Short answer questions Direct Observation	
4.5 Make glass door panel	20min.	02Hours	Explain the making of glass door panel. Demonstrate the making of glass door panel.	Short answer questions Direct Observation	
4.6 Make revolving door	20min.	02Hours	Explain the making of revolving door. Demonstrate the making of revolving door.	Short answer questions Direct Observation	

Module 5: Fix Partition

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
5.1 Fix half Partition	20min.	02Hours	Explain the Fixing of half Partition Demonstrate the Fixing of half Partition	Short answer questions Direct Observation	
5.2 Fix full partition	20min.	02Hours	Explain the Fixing of full partition. Demonstrate the Fixing of full partition	Short answer questions Direct Observation	
5.3 Fix partition with flush door	20min.	02Hours	Explain the Fixing of partition with flush door. Demonstrate the Fixing of partition with flush door.	Short answer questions Direct Observation	
5.4 Fix partition of casement section	20min.	02Hours	Explain the Fixing of partition of casement section Demonstrate the Fixing of partition of casement section	Short answer questions Direct Observation	
5.5 Fix partition with sliding door	20min.	02Hours	Describe the fixing of partition with sliding door. Demonstrate the fixing of partition with sliding door.	Short answer questions Direct Observation	

Module 6: Perform Installation

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
6.1 Install flush door frame	20min.	02Hours	Explain the Installation of flush door frame. Demonstrate the Installation of flush door frame.	Short answer questions Direct Observation	
6.2 Install flush door panel	20min.	02Hours	Explain the Installation of flush door panel. Demonstrate the Installation of flush door panel.	Short answer questions Direct Observation	
6.3 Install swing door	20min.	02Hours	Explain the Installation of swing door. Demonstrate the Installation of swing door.	Short answer questions Direct Observation	
6.4 Install casement window frame	20min.	02Hours	Explain the Installation of casement window frame. Demonstrate the Installation of casement window frame.	Short answer questions Direct Observation	
6.5 Install casement window panel	20min.	02Hours	Explain the Installation of casement window panel. Demonstrate the Installation of casement window panel.	Short answer questions Direct Observation	
6.6 Install sliding window frame	20min.	02Hours	Explain the Installation of sliding window frame. Demonstrate the Installation of sliding window frame.	Short answer questions Direct Observation	
6.7 Install sliding window panel	20min.	02Hours	Explain the Installation of sliding window panel. Demonstrate the Installation of sliding window panel.	Short answer questions Direct Observation	
6.8 Install fly screen/mesh	20min.	02Hours	Explain the Installation of fly screen/mesh. Demonstrate the Installation of	Short answer questions Direct	

			fly screen/mesh.	Observation	
6.9 Install shower cabin	20min.	02Hours	Explain the Installation of shower cabin. Demonstrate the Installation of shower cabin.	Short answer questions Direct Observation	

Module 7: Perform Finishing

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
7.1 Perform glass/board fitting	20min.	02Hours	Explain the glass/board fitting. Demonstrate the glass/board fitting.	Short answer questions Direct Observation	
7.2 Perform clipping	20min.	02Hours	Explain the clipping Demonstrate the clipping	Short answer questions Direct Observation	
7.3 Press gasket	20min.	02Hours	Explain the Press gasket Demonstrate the Press gasket	Short answer questions Direct Observation	
7.4 Perform silicon filling	20min.	02Hours	Explain the silicon filling Demonstrate the silicon filling	Short answer questions Direct Observation	
7.5 Fit accessories	20min.	02Hours	Explain the fit accessories as per requirement. Demonstrate the Fit accessories	Short answer questions Direct Observation	
7.6 Perform cleaning	20min.	02Hours	Explain the cleaning of finish products Clean the job with proper tools.	Short answer questions Direct Observation	

Module 8: Develop Professionalism

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
8.1 Read books/ newspapers	20min.	02Hours	Understand the relevant books newspapers, books and concern area of interest. Find relevant information and read.	Oral questions Short answer questions	
8.2 Visit other sites	20min.	02Hours	Select the sites for visit. Perform visit and observe the relevant skills	Process evaluation Direct observation	
8.3 Learn from senior/supervisor	20min.	02Hours	Deal with senior / supervisor and take information from them. Collect information and skill from senior and observe the method and techniques used by the supervisor/external expert.	Direct observation Short answer question.	
8.4 Attain training	20min.	02Hours	Know the training to be required and location of area. Highlight the deficient area and get training in the relevant field.	Process evaluation Short answer question.	
8.5 Participate in workshops	20min.	02Hours	Understand the importance of workshops. Participate the workshop to enhance the knowledge and skill.	Short answer question. Process evaluation	

Module 9: Perform Communication

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
9.1 Communicate with client/owner	20min.	02Hours	Explain communication technique and communications skill with client/owner.	Oral questions Short answer questions	
9.2 Communicate with contractor	20min.	02Hours	Explain communication technique and communications skill with contractor. .	Oral questions Short answer questions	
9.3 Communicate with senior/junior	20min.	02Hours	Explain communication technique and communications skill with senior/junior.	Oral questions Short answer questions	
9.4 Communicate with peers	20min.	02Hours	Explain communication technique and communications skill with peers.	Oral questions Short answer questions	
9.5 Communicate with engineer/ overseer	20min.	02Hours	Explain communication technique and communications skill with engineer/overseer.	Oral questions Short answer questions	
9.6 Communicate with electrician	20min.	02Hours	Explain communication technique and communications skill with electrician.	Oral questions Short answer questions	
9.7 Communicate with concerned office/stakeholder	20min.	02Hours	Explain communication technique and communications skill with concerned office/stakeholder.	Oral questions Short answer questions	

Module 10: Install Cladding Sheets

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
10.1 Perform pluming	20min.	02Hours	Explain the pluming. Demonstrate the pluming operation.	Short answer questions Direct Observation	
10.2 Fit base channel	20min.	02Hours	Explain the base channel. Demonstrate the base channel	Short answer questions Direct Observation	
10.3 Bend sheets	20min.	02Hours	Explain the Bending of sheets. Demonstrate the Bending of sheets.	Short answer questions Direct Observation	
10.4 Fix sheets	20min.	02Hours	Explain the Fixing sheets. Demonstrate the Fixing sheets.	Short answer questions Direct Observation	
10.5 Ensure waterproofing	20min.	02Hours	Explain the waterproofing. Demonstrate the waterproofing.	Short answer questions Direct Observation	

Module 11: Follow Safety Rules

Learning Units	Theory Days/ hrs	Workplace Days/ hrs	Recommended formative assessment	Recommended Methodology	Scheduled Dates
11.1 Wear work clothes	20min.	02Hours	Explain which type of clothes wear in the workshop.	Short answer questions	
11.2 Deal with work accidents and injuries	20min.	02Hours	Explain how Deal with work accidents and injuries. Demonstrate to use first aid box.	Short answer questions Direct Observation	
1.3 Inspect connections	20min.	02Hours	Explain the electrical connections. Demonstrate the checking of electri connections and repair it	Short answer questions Direct Observation	
11.4 Use fire extinguishers	20min.	02Hours	Explain the function of fire extinguishers. Demonstrate on fire.	Short answer questions Direct Observation	

Supportive Notes

Assessment Context

This unit may be assessed on the job, off the job, or a combination of on and off the job demonstrated by an individual working alone or as part of a team

Critical aspects

- Safety precautions.
- Selection and use of tools and equipment.
- Use of First Aid box.
- Use of Fire Extinguisher

Assessment condition

This unit may be assessed separately or in conjunction with other related units. The candidate will have access to all tools, equipment, materials and demonstrations required. The candidate will be permitted to refer any relevant drawings.

The candidate will be required

- Orally or by other method of communication to answer questions asked by the assessor**.**
- Present evidence related to this unit.

Assessors must be satisfied that the candidate can competently and consistently perform all element of the unit as specified by criteria and that he/she possesses the required underpinning knowledge**.**

Resources required for assessment

These include all tools and equipment.

List of Machinery / Equipment / Tools

(FOR A CLASS OF 25 STUDENTS)

Name of Trade	**ALUMINUM FABRICATOR**
Duration of Course	**Six Month**

Sr. No.	Tools & Equipment	Quantity
1.	Measuring Tape	25Nos.
2.	Bench vice with bench	02 Nos.
3.	Steel rule	10 Nos.
4.	Vernier caliper	02Nos.
5.	Try Square	10 Nos.
6.	Hand Hacksaw	10 Nos.
7.	Centre punch	10 Nos.
8.	Scriber	10 Nos.
9.	Divider	10 Nos.
10.	Flat Screw driver set	25 set
11.	Philips type screw driver set	25 set
12.	Rivet Gun	10 Nos.
13.	Pliers	06 Nos.
14.	Hand Drill Machine	06 Nos.
15.	Punching Machine	06 Nos.
16.	Jig Saw	10 Nos.
17.	Aluminum Cutting Machine	10 Nos.
18.	Allen key set 1mm to 10mm	4 set
19.	Double ended open spanner set 6-32mm	01 set
20.	Ring spanner set 6-32mm	01 set
21.	Hammer 500 gm	25 Nos.
22.	Marking hammer 500 gm	6 Nos.
23.	Flat file 250x3	25 Nos.
24.	Flat file 150x3	10 Nos.
25.	Half round file 200x2	10 Nos.
26.	Needle file set	05 Nos.
27.	Gasket Fixing Roller	10 Nos.
28.	Plum bob	10 Nos.
29.	Chisel	10 Nos.
30.	Brush	10 Nos.
31.	Paper cutter	10 Nos.
32.	Glass Cutter	10 Nos.
33.	Glass Catcher	10 Nos.
34.	Water level	10 Nos.
35.	Sprit Level	10 Nos.
36.	Silicon Gun	10 Nos.
37.	Key file set	25 Nos.
38.	Flat chisel	10 Nos.
39.	Drill set 1 to 10 mm with difference 0.1 mm	12 set
40.	Hand vice	8 Nos.
41.	Adjustable wrench 12”	04 Nos.

42.	Safety goggle	25 Nos.
43.	Tool box	25 Nos.
44.	Wire Mesh Roller	25 Nos.
45.	Hand Shear 10”	10 Nos.
46.	Hand Tap with Handle M2-M6	10 Set
47.	Combination Set	5 Set
48.	Cut-Off machine	2 Nos.
49.	Section Bending Machine	1 No.

List of Consumable Supplies

Name of Trade	Aluminium Fabricator
Duration	SIX MONTH

Sr. No.	Name of Consumable Supplies
1.	Aluminium Sections (All size and shape required as per **Learning Units)**
2.	Hand hacksaw blades
3.	Screws (self tapping different sizes)
4.	Rivets (different sizes)
5.	Silicon tubes
6	Rubber
7	Aluminium angle
8	Screws (for fixing frame in the wall)
9	Drill set 1 to 10 mm with difference 0.1 mm
10	Glass
11	cladding sheet
12	board

Reference Books

Sr. No.	Title of the book	Author Name
1.	Aluminum Fabrication and Finishing Vol-III	Kent R. Van Horn
2.	Aluminum Fabrication Guide	David Tilson Barrry, Janice Levieux
3.	Metallurgy of Aluminum Fabrication	Dietrich Altenpohl

SCHEME OF STUDIES

Aluminum Fabricator

Sr #	Modules	Theory Hours	Practical Hours	Total Hours
1	Perform Measurement	12	66	78
2	Perform Bench work	15	58	73
3	Make Window	17	60	77
4	Make Door	15	58	73
5	Fix Partition	12	52	64
6	Perform Installation	18	83	101
7	Perform Finishing	15	62	77
8	Develop Professionalism	12	52	64
9	Perform Communication	17	72	89
10	Install Cladding Sheet	12	46	58
11	Follow Safety Rules	15	31	46
TOTAL HOURS		**160**	**640**	**800**