





COMPETENCY BASED CURRICULUM

PM Vishwakarma

Qualification Name: Armourer

Version: 1.0

Submitted By: Capital Goods & Strategic Skill Council

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PM Vishwakarma Qualification Details

Vishwakarma Qualification Name	Armourer
Sector Name	Capital Goods
Job role Description	The incumbent in the job is responsible for performing basic sheet metal cutting, forming and assembly operations for making armours as per the requirement.
Trainee's Entry Profile (Specify as per applicable variants)	Existing Vishwakarmas duly verified as per the Scheme
Content availability	 ☐ Yes Link to Access Content: ☑ No Availability Date:
Curriculum Creation Date	14/05/2024
Curriculum Valid Up to Date	

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Module Details

Introduction about Advanced Machines & Tools

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S. No	Module Name	Learning Outcomes	Training Duration (Hours)		Ouration (Hours) Delive Metho		Tool/Equipment Required (if applicable)
			Theory	Practical	OJT		
1.	Introduction about Advanced Machines & Tools like Laser cutting machine, Air hydraulic rivetter, hand polishing machine, cleaning liquid, leather apron and drilling machine	 Discuss about the principles of laser cutting technology, including laser beam generation, focusing, and material interaction. Gain insight into the principles of air hydraulic systems and their application in riveting machines. Explain the principles of surface polishing and finishing, including material removal techniques, abrasive selection, and surface preparation. Discuss the importance of wearing protective gear, such as leather aprons, gloves, and safety goggles, in armory environments to prevent injuries and hazards. Perform setting and calibrating the laser cutting machine, including adjusting power, speed, and focus settings for different materials and thicknesses. Demonstrate how to set up and adjust riveting tools and dies on the air hydraulic rivetter for different riveting applications and materials. Demonstrate the ability to set up and adjust rivetter 	4:00	6:00		Offline	Laser cutting machine, air hydraulic rivetter, hand polishing machine, cleaning liquid, leather apron, drilling machine, safety goggles, ear protection, work gloves, dust mask, fire extinguisher, first aid kit, machine manual and operating instructions, tool maintenance kit, workbench or table for working with machines and tools

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		 for different riveting applications and materials. Practice wearing leather aprons comfortably and securely, ensuring full coverage and protection against potential hazards. 				
2.	Carry out sheet metal cutting using Laser cutting machine	 Discuss the principles of sheet metal cutting, including the role of different cutting methods and their applications in various industries. Identify the components and functions of a laser cutting machine, including the laser source, optics, control system, and cutting bed. Explain the safety precautions and measures required when operating a laser cutting machine, including personal protective equipment (PPE) and machine-specific safety protocols. Recognize the types of materials suitable for laser cutting, including metals like steel, aluminum, and copper, as well as non-metallic materials like plastics and composites. Comprehend the factors influencing cutting parameters, such as material thickness, laser power, cutting speed, and assist gases. Discuss the advantages and limitations of laser cutting compared to other cutting methods, such as plasma cutting, waterjet cutting, and traditional mechanical methods. Analyze common defects and issues encountered during laser cutting, such as dross, kerf width variation, and thermal 	5:00	15:00	Offline	Laser cutting machine, safety goggles, work gloves, work apron, material handling equipment, sheet metal clamps, measuring tools

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distortion, and implement corrective actions.
Explain the environmental and sustainability
aspects associated with laser cutting
processes, including energy consumption,
material waste, and emissions control.
Operate a laser cutting machine safely and
proficiently, including startup/shutdown
procedures, loading/unloading materials, and
emergency protocols.
Set up and configure cutting parameters based
on material type, thickness, and desired
cutting quality, using the machine's control
interface.
Prepare sheet metal blanks for cutting,
including material handling, surface cleaning,
and fixturing techniques to ensure accurate
and stable cutting.
Execute sheet metal cutting operations
according to provided drawings or
specifications, maintaining dimensional
accuracy and surface finish requirements.
Monitor and troubleshoot the cutting process
in real-time, adjusting parameters as needed to
address issues like slag accumulation, nozzle clogging, or misalignment.
Perform post-cutting operations, such as edge
deburring, part sorting, and inspection, to
ensure the quality and integrity of the cut
components.
Collaborate effectively with team members to
coordinate workflow, prioritize tasks, and
optimize productivity in a manufacturing
optimize productivity in a manufacturing

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		 environment. Document and report process parameters, production metrics, and any deviations or incidents encountered during sheet metal cutting operations. Demonstrate good housekeeping practices and adherence to safety regulations throughout the entire cutting process, including material handling, waste disposal, and equipment maintenance. 				
3.	Carry out assembling operation using air hydraulic rivetter and drilling machine	 Explain the principles of assembling. Identify various types of advanced tools and equipment used in sheet metal operations. Comprehend the safety protocols and procedures associated with operating air hydraulic riveters and drilling machines. Recognize different types of rivets and their applications in sheet metal assembly. Discuss about the types of drills, drill bits, and drilling techniques for various sheet metal materials. Describe the importance of precision and accuracy in sheet metal assembly processes. Familiarize oneself with reading and interpreting engineering drawings and specifications related to sheet metal components. Discuss troubleshooting techniques for common issues encountered during sheet 	2:00	4:00	Offline	Air hydraulic rivetter, drilling machine, safety goggles, work gloves, work apron, measuring tools, fasteners, material handling equipment, drill bits, rivet gun, clamps, deburring tool

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metal assembly operations.	
Operate an air hydraulic riveter safely and	
effectively to assemble sheet metal	
components.	
Demonstrate proficiency in selecting	
appropriate rivets and setting up the air	
hydraulic rivetter for various assembly tasks.	
Utilize a drilling machine to accurately drill	
holes in sheet metal components according to	
engineering specifications.	
Practice proper clamping and securing to builting to a group at a billing and selections.	
techniques to ensure stability during drilling	
and assembling operations.	
Perform assembly tasks efficiently while	
maintaining high standards of quality and	
precision.	
Troubleshoot common issues such as rivet	
misalignment or drill bit breakage during	
practical exercises.	
Apply knowledge of sheet metal properties	
and material characteristics to optimize	
cutting, forming, and assembly processes.	
Interpret engineering drawings and follow	
assembly instructions to complete assigned	
tasks accurately.	
Collaborate effectively with team members to	
streamline production workflows and achieve	
project objectives.	
Adhere to safety protocols and guidelines at	
all times to prevent accidents or injuries in the	

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		workshop environment.				
4.	Carry out the finishing of products/ workpiece using cleaning liquid and hand polishing machine	 Explain the principles of finishing operations including techniques such as coating, grinding buffing and shearing. Comprehend the importance of safety precautions and measures while handling advanced tools and equipment for sheet metal operations. Learn to interpret technical drawings, blueprints, and specifications related to sheet metal components and assemblies. Familiarize with the selection, setup, and operation of advanced tools and equipment such as CNC shears, press brakes, and hydraulic presses for cutting and forming sheet metal. Discuss the concept of tolerance and quality standards in sheet metal fabrication, ensuring the accuracy and precision of the produced components. Demonstrate proficiency in setting up and operating advanced sheet metal cutting tools and equipment to achieve precise cuts according to given specifications. Execute various sheet metal forming operations, including bending, rolling, and shaping, to produce components with desired geometries and dimensions. Practice safety protocols while handling cutting and forming equipment, including the use of personal protective equipment (PPE) 	4:00	5:00	Offline	Cleaning liquid, hand polishing machine, safety goggles, work gloves, work apron, polishing pads or wheels, buffing compounds, measuring tools, dust mask.

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 Apply knowledge of cleaning liquids and polishing techniques to finish sheet metal products to the required quality standards. Develop skills in troubleshooting common issues encountered during sheet metal cutting, forming, and finishing processes. Collaborate effectively with team members to assemble fabricated sheet metal components into final products, ensuring proper fit and alignment. Evaluate the quality of finished products through visual inspection and measurement techniques, identifying any defects or imperfections and implementing corrective measures. Document work processes, including material usage, machine settings, and quality checks, to maintain traceability and quality assurance records. 	15:00	30:00			
Total – Duration (mours)	15.00 Hr	Hr			
Grand Total – Duration (Hours)	45:00 Hours				

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Entrepreneurship skills and design Workshop

~	Entrepreneurship skins and design workshop								
S. No	Module Name	Learning Outcomes	Training Duration (Hours)			Delivery Methodolog v	Tool/Equipment Required (if applicable)		
			Theory	Practical	OJT	<i>J</i>			
1.	Design and Innovation	 Understand the principles of weapon design and innovation, including materials science, ergonomics, and functionality. Apply design thinking methodologies to develop innovative weapon prototypes that enhance usability and safety for users. 	01:00	02:00		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection		
2.	How to setup a safe workplace	 Comprehend occupational health and safety regulations related to weapon handling and storage. Implement safety protocols and procedures to ensure a secure workplace environment, including proper storage, handling, and maintenance of weapons. 	01:00	02:00		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection		
3.	Leadership & Teamwork	 Recognize the importance of effective leadership and teamwork in achieving organizational goals. Demonstrate leadership skills by coordinating with team members to efficiently manage production schedules and address any issues that arise during the manufacturing process. 	01:00	02:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection		
4.	Communication Skills: Listening & Speaking	 Understand the significance of active listening and clear communication in a team setting. Practice active listening and articulate 	01:00	04:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection		

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S. No	Module Name	Learning Outcomes	Training Duration (Hours)			Delivery Methodolog y	Tool/Equipment Required (if applicable)
			Theory	Practical	OJT		
		ideas effectively during team meetings and discussions regarding weapon design, production, and safety procedures.					
5.	Problem Solving & Negotiation Skills	 Develop problem-solving strategies and negotiation techniques to resolve conflicts and address challenges in the workplace. Identify and address issues related to weapon design flaws, production delays, or resource constraints through effective problem-solving and negotiation with stakeholders. 	01:00	02:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
6.	Market research and analysis	 Learn methods for conducting market research and analysis to identify trends, customer preferences, and competitive landscapes in the firearms industry. Analyze market data to identify potential opportunities for product innovation and expansion, aligning weapon designs with market demands and customer needs. 	01:00	04:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
7.	Networking and Industry exposure	 Recognize the importance of networking and building professional relationships within the firearms industry. Attend industry events, trade shows, and networking functions to establish connections with suppliers, distributors, and potential clients, facilitating collaboration and business growth. 	01:00	02:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection

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S. No	Module Name	Learning Outcomes	Training	Training Duration (Hours)			Tool/Equipment Required (if applicable)
			Theory	Practical	OJT		
8.	Business Entity Registration	 Understand the process of registering a business entity, including legal requirements and tax implications. Complete the necessary paperwork and filings to register the armoury business as a legal entity, ensuring compliance with local regulations and establishing a solid foundation for operations. 	00:30	02:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
9.	Business Plan	 Discuss how to develop a comprehensive business plan that outlines the mission, vision, goals, and strategies for the armoury business. Create a detailed business plan that addresses key aspects such as target market analysis, competitive positioning, financial projections, and marketing strategies to guide the growth and success of the armoury business. 	00:30	02:00			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
Total D	uration (Hours)		8:00 Hours	22:00 Hours			White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
		Grand Total Duration (Hours)	30:00 Ho	urs		•	

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Advanced Digital Skills

	Advanced Digital Skills										
S. No	Module Name	Learning Outcomes		(Hours)		(Hours)				Delivery Methodolo gy	Tool/Equipment Required (if applicable)
			Theory	Practical	OJT						
1.	Advanced features of using mobile phones (Smart Phones)	 Learn to securely use the mobile phone by locking/unlocking phone/apps using various options like face recognition, fingerprint, etc. Learn to use different mobile apps, QR code scanners, editing tools, Google assistant, meeting apps like Teams, etc. Learn to access and manage documents stored in different folders in phone. E.g. File folder, download folder etc. Manage phone memory and data usage. Learn to access, store, and share documents using Google Drive on your phone. 	1.5 hours	1.5 hours		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection				
2.	Using advanced Internet and mobile applications (Apps)	 Learn how to keep mobile apps secure. Learn to secure apps installed on phone. Learn about the rules and regulations of different mobile apps. Understand to increase the business outreach via using different mobile application 	3 hours	4 hours		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection				

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3.	Privacy and security related to Internet and mobile phones	 Learn about the tailor-made apps suitable for various business applications like calculation apps, inventory management apps etc. Understand privacy and manage profiles. Understand about Spam calls Learn about safe browsing practices. Learn about the importance of reporting online harassment and cyberbullying. Learn about the advancement in technology using Gen-Al tools. 	2 hours	3 hours	Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
			6.5 Hours	8.5 Hours		
		Grand Total Duration (Hours)	15 Hours	3		

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Advanced Financial Skills

S. No	Module Name	Learning Outcomes		Training Duration (Hours)		Delivery Methodolo gy	Tool/Equipment Required (if applicable)
			Theor y	Practic al	OJ T		
1	Importance of Being Financial Literate	 Identify long-term and short-term assets, liabilities, investments, etc. Use types of payment methods such as Cheques, UPI, RTGS, NEFT etc Use mobile applications and online platforms to track expenses and manage financial goals (YONO). Understand the benefits of various Government schemes such as Pradhan Mantri Jan Dhan Yojana, Jeevan Jyoti Bima Yojana, Suraksha Bima Yojana, Sukanya Samriddhi Yojana, National Pension Scheme (NPS), Atal Pension Yojna (APY) 	1.00 Hr	1.00 Hr		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
2	Managing bank account	Differentiate various banking services offered by bank such as transfer-receipt of money,	1.00 Hr	1:25 Hr		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection

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3	Managing Loans	 deposit-withdrawal etc. Use and Operate ATM, Deposit Cash/ Cheque through machines or manually Visit local bank branch to operate and manage bank accounts Handle mobile banking and net banking to operate and manage bank accounts Aware of safety measurement to be taken while managing bank accounts Differentiate various types and features of secured and unsecured loans Select appropriate type of loan as per need, purpose, and loan terms and conditions Identify appropriate loan repayment structure based on the interest rate and duration. Have knowledge of legal procedure for resolving delay/ default in payment of loan instalment 	1.25 Hr	1.50 Hr	Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
	Basic Understandin g of taxes	 Differentiate types of taxes such as Income tax, Goods and Services Tax (GST), etc. Explain simple terms related to taxation such as taxable 	1.50 Hr	2.00 Hr	Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection

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5.	Using advanced features of Digital Payment Applications	 income, tax rates, Tax Deductible at Source (TDS), Value of Goods etc. Have clarity on important concepts and applicability of income tax and GST Understand the Basic guidelines for filing income tax and GST returns, including deadlines Able to install and configure Digital Payment Applications Use advanced features of Digital Payment Applications such as wallets, bill payments, recharge etc. 	1.25 Hr	2.00 Hr		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
		 Complete transactions using Digital Payment Applications such as UPI, RTGS, NEFT, IMPS etc. 					
6.	Awareness and Prevention of Financial Frauds	 Able to identify common online financial frauds and spams and associated potential risks Use safe and ethical practices for securing online transactions 	0.50 Hr	0.75 Hr		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
		Crowd Total Duration (Hours)	6.50 Hi		0 Hr	S	
		Grand Total Duration (Hours)	15 Hou	II S			

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Advanced Marketing and Outreach Skills

	Advanced Marketing and Outreach Skills						
S. No	Module Name	Learning Outcomes		ng Durat ns/ Hours	5)	Delivery Methodolo gy	Tool/Equipment Required (if applicable)
			Theor y	Practic al	OJ T		
1	Marketing and Customer Insights	 Conduct marketing activities for artisian products. Evaluate customer feedback to improve product offerings and marketing strategies. 	1 hours	2 hours		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
2	Quality Assurance and Certification in Craftsmanship	 Obtain relevant quality certifications such as e ISI mark, Agmark and Hallmark. Manage product quality as per quality standards. 	1 hours	1 hours		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
3	Brand Development and Promotion Strategies	 Understand brand identity to enhance sales and promotion. Promote products through Social media and digital marketing. Leverage National Marketing Committee support in operations and logistics. 	1 hours	2 hours		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
4	E-Commerce Management for Artisans	 Onboarding e-commerce platform. Understand process of cataloguing the products and services of Vishwakarmas 	1 hours	2 hours		Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection

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		Grand Total Duration (Hours)	hours	hours		
			6	9		
6	Trade Fairs and Exhibitions	 Participate in trade fairs, exhibitions related to the products. Set up collective display of PM Vishwakarma Products to associations of the artisan groups. 	1 hours	1 hours	Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection
5	Building Trade Network for Craft Business	 Apply strategies for e-commerce linkage with GeM, Khadi India, MSME Mart. Use digital marketing for wider reach and publicity of the Vishwakarma Scheme. Identify and collaborate with relevant Industry Bodies. Create links with suitable exporters and traders operating under the sector. 	1 hours	1 hours	Classroom	White board, marker, duster, handbooks, Screen, Computer, Projector, Mobile phone, Internet connection

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Trainer and Assessor Requirements

(As per requirement)

1.	Trainer's Qualification and experience in the	Domain Trainer:
	relevant sector (in years)	 a) ITI Instructors from Directorate General of Training (DGT) ecosystem who have preferably worked in the industry and have technical know-how about the operations of the modern listed tools in relevant trades b) Certified trainers from the NCVET recognized Awarding Bodies c) Working professionals from the industry or clusters who have good knowledge and experience about the working/operations of the listed modern tools in the relevant trades Life Skills Trainer: a) ITI Instructors from Directorate General of Training (DGT) ecosystem* b) Certified trainers from the recognized Awarding Bodies* *Mandatory Training of Trainers (ToT) of existing certified trainers on employability and entrepreneurship skills modules
2.	Assessor's Qualification and experience in relevant sector (in years) (Preference – Vishwakarma Trainer in relevant trades will be onboarded on assessments for becoming Certified Assessors / Certified Assessors in relevant trade. Certified assessor will also take the Life Skills Module assessment.)	 Assessor: a) Certified Assessors of the recognized Assessment Agencies b) Certified trainers may also get certified as an Assessor to conduct assessments in relevant trades (A Trainer can also act as an Assessor for different locations). c) Working professionals from the industry or clusters who have good knowledge and experience about the working/operations of the listed modern tools in the relevant trades and experience in technical assessments in current and previous assignments.

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Glossary & Acronyms

(As per requirement)

Glossary

Term	Description
National Occupational	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list
Standards (NOS)	down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines
	that an individual has achieved learning outcomes to given standards.
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective
	of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.

Acronyms

Acronym	Description
NCrF	National Credit Framework
NSQF	National Skills Qualification Framework
OJT	On -the -Job Training

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Annexure: Marketing and Branding

Exercises for the Participants

Objective: To make participants assimilate the concepts taught and demonstrate the learning.

Time and Task: About 2 hours can be spent on first explaining the concept of value along with its elements and then perform the exercise. If the participants are literate trainer can ask them to write down points on papers. If the participants are dominantly illiterate then trainer can help them by writing down the points shared on board.

4.1 Creating Value Table

Table-1: Value: {(benefits + Returns) – (Costs + Risks)}

All the elements given of value are to be defined from consumer's perspective. Benefits that the customers will receive because of the craftsperson's work. Returns, i.e., long term benefits that customers will receive. Costs are the payments (monetary and non-monetary) incurred by customers in availing the service or purchasing the product made by craftsperson. Risks to be avoided by customers by purchasing the product or service given by the concerned craftsperson. Overall customer's perspective is to be talked about in this exercise.

Benefits	Return	-	Costs	Risks
	S			
- Functional	- Rent		- Monetary (Acquisiti	- Financial
- Emotional	-		on;	- Time
(bonding)	Income		Possessio	
			n;	-
- Social			Usage)	Psychologic

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(Recognitio	al
n)	- Time &
	Energy
-	
Experiential	-
(Design;	Psychologic
Service;	al
Brand)	

Each craftsperson should be able to learn the importance of communicating the value that his / her profession offers to the customers. Generally, it is observed that craftsmen have some idea about the value they contribute, but is not clearly articulated. The aim of this exercise is to make the knowledge of craftsperson explicit in terms of their value contributions. Table-1 is a generic descriptive table which explains the sub-components of the elements of value. This is for trainer's understanding. It is expected that the trainer would use the given tables customized for the concerned crafts. This is to make the craftsperson come up with the value they are creating for the customers.

4.2 Armorer

The following points are only indicators for the trainer. S/he is expected to make the participants speak and bring out as many points as possible.

Benefits	Returns	Costs	Risks
- Robust	- The product	- Reasonable	- Risk of not
products	will remain in	price	using quality
	your		product.
- Products that	household for	- Easy to	
you will bond	long.	maintain	- Risk of
with as you			hurting self in
will use them	- The products	- Easy to use	case of a bad
for long.	also help you		product used.
	earn better	- Need not	

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- Others will	money as the	look a	t - Satisfaction
recognise the	products are	options	for using best
quality	robust.		products.
easily.		- Value for	ſ
	- The products	money	
- I am able to	are useful for	products	
design nice	people		
products and	involved in		
repair them	catering etc.		
as well.			

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