



COMPETENCY STANDARD FOR PATTERN MAKING, GRADING AND CAD-CAM OPERATIONS

Level: 4

(Leather and Leather Goods Sector)

Competency Standard Code: CS-LLG-PMGCO-L4-EN-V1



**National Skills Development Authority
Prime Minister's Office
Government of the People's Republic of Bangladesh**

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This Competency Standard for Pattern Making, Grading and CAD-CAM Operations is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order to meet the qualification of individuals who graduated through the established standard via competency-based assessment for a relevant job.

This document has been developed by NSDA in association with Leather and Leather Goods Sector, industry representatives, academia, related specialist, trainer and related employee.

Public and private institutions may use the information contained in this standard for activities benefitting Bangladesh.

Introduction

The NSDA aims to enhance an individual's employability by certifying completeness with skills. NSDA works to expand the skilling capacity of identified public and private training providers qualitatively and quantitatively. It also aims to establish and operationalize a responsive skills ecosystem and delivery mechanism through a combination of well-defined set of mechanisms and necessary technical supports.

Key priority economic growth sectors identified by the government have been targeted by NSDA to improve current job skills along with existing workforce to ensure required skills to industry standards. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training program. " **Pattern Making, Grading and CAD-CAM Operations** " is selected as one of the priority occupations of Leather and Leather Goods Sector. This standard is developed to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

Generally, a competency standard informs curriculum, learning materials, assessment and certification of trainees enrolled in Skills Training. Trainees who successfully pass the assessment will receive a qualification in the National Skills Qualification Framework (NSQF) under Bangladesh National Qualification Framework and will be listed on the NSDA's online portal.

This competency standard is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements. A series of stakeholder consultations, workshops were held to develop this document.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

Overview

A competency standard is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognising and assessing people's skills, and may also have optional support materials
- enable industry recognised qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of representative from NSDA, Key Institutions, ISC, and industry experts to identify the competencies required of an occupation in Leather and Leather Goods Sector.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. CS acknowledge that people can achieve technical and vocational competency in many ways by emphasizing what the learner can do, not how or where they learned to do it.

With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guide

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- a chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements
- the Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide.

**Competency Standards for National Skill Certificate, Level-4 in
Pattern Making, Grading and CAD-CAM Operations in Leather and Leather Goods Sector**

Level Descriptors of NSQF (BNQF 1-6)

Level & Job classification	Knowledge Domain	Skills Domain	Responsibility Domain
6-Mid-Level Manager/ Sub Assistant Engineer	Comprehensive actual and theoretical knowledge within a specific work or study area with an awareness of the validity and limits of that knowledge, able to analyse, compare, relate and evaluate.	Specialised and wider range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems. Communicate professional issues and solutions to the team and to external partners/users.	Work under broad guidance and self-motivation to execute strategic and operational plan/s. Lead lower-level management. Diagnose and resolve problems within and among work groups.
5-Supervisor	Broad knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to scrutinize and break information into parts by identifying motives or causes.	Broad range of cognitive and practical skills required to generate solutions to specific problems in one or more work or study areas. Communicate practice-related problems and possible solutions to external partners.	Work under guidance of management and self-direction to resolve specific issues. Lead and take responsibility for the work and actions of group/team members. Bridge between management.
4-Highly Skilled Worker	Broader knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to solve problems to new situations by comparing and applying acquired knowledge.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information. Communicate using technical terminology and IT technology with partners and users as per workplace requirements.	Work under minimal supervision in specific contexts in response to workplace requirements. Resolve technical issues in response to workplace requirements and lead/guide a team/ group.
3-Skilled Worker	Moderately broad knowledge in a specific work or study area, able to perceive ideas and abstract from drawing and design according to workplace requirements.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools. Communicate with his team and limited external partners upholding the values, nature and culture of the workplace	Work or study under supervision with considerable autonomy. Participate in teams and responsible for group coordination.
2-Semi Skilled Worker	Basic understanding of underpinning knowledge in a specific work or study area, able to interpret and apply common occupational terms and instructions.	Skills required to carry out simple tasks, communicate with his team in the workplace presenting and discussing results of his work with required clarity.	Work or study under supervision in a structured context with limited scope of manipulation
1 –Basic Skilled Worker	Elementary understanding of ability to interpret the underpinning knowledge in a specific study area, able to interpret common occupational terms and instructions.	Specific Basic skills required to carry out simple tasks. Interpret occupational terms and present the results of own work within guided work environment/ under supervision.	Work under direct supervision in a structured context with limited range of responsibilities.

List of Abbreviations

CS	Competency Standard
ISC	Industry Skills Council
NSDA	National Skills Development Authority
NSQF	National Skills Qualifications Framework
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
SCVC	Standards and Curriculum Validation Committee
STP	Skills Training Provider
SOP	Standard Operating Procedure
UoC	Unit of Competency
MSDS	Material Safety Data Sheet
PPE	Personal Protective Equipment
SOP	Standard Operating Procedures

Approved by

29th Authority Meeting (AM) of NSDA

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**Competency Standards for National Skill Certificate, Level- 4 in
Pattern Making, Grading and CAD-CAM Operations in Leather and leather Goods Sector**

Course Structure

SL No	Unit code and Title	UOC Level	Nominal (hours)
Generic Units of Competencies			
1.	GU-02-L1-V1	Apply Occupational Safety and Health (OSH) Procedure in the Workplace	15
2.	GU-04-L3-V1	Lead Small Team	20
Sub Total			35
Sector Specific Units of Competencies			
3.	SU-LLG-01-L1-V1	Work in the Leather, Footwear and Leather Goods Industries	30
4.	SU-LLG-02-L2-V1	Comprehend Compliance Issues in Leather, Footwear and Leather Goods Industries	30
Sub Total			60
Occupation Specific Units of Competencies			
5.	OU-LLG-PMGCO-01-L4-V1	Understand Pattern Making and CAD-CAM Operations	35
6.	OU-LLG- PMGCO -02-L4-V1	Carryout Manual Pattern Making Operations	45
7.	OU-LLG- PMGCO -03-L4-V1	Prepare a Standard / Shell Using 3D Software	50
8.	OU-LLG- PMGCO -04-L4-V1	Perform Computer Aided Pattern Making Operations Using 2D Software	70
9.	OU-LLG- PMGCO -05-L4-V1	Perform Pattern Grading	45
10.	OU-LLG- PMGCO -06-L4-V1	Perform Pattern Consumption	15
Sub Total			260
Total Duration			360

Units & Elements at Glance

Generic Competencies

Code	Unit of competency	Elements of competency	Duration (hours)
GU-02-L1-V1	Apply Occupational Safety and Health (OSH) procedure In the Workplace	<ol style="list-style-type: none">1. Identify OSH policies and procedures2. Follow OSH procedure3. Report hazards and risks4. Respond to emergencies5. Maintain personal well-being	15
GU-04-L3-V1	Lead Small Team	<ol style="list-style-type: none">1. Provide team leadership2. Assign responsibilities3. Set performance expectations for team members4. Supervise team performance	20
Total hours			35

Sector specific competencies

Code	Unit of competency	Elements of competency	Duration (hours)
SU-LLG-01-L1-V1	Work in the Leather, Footwear and Leather Goods Industries	<ol style="list-style-type: none"> 1. Identify positions, job roles and responsibilities 2. Identify materials used in leather, footwear and leather goods industries 3. Explain the workflow of making footwear and leather goods 	30
SU-LLG-02-L2-V1	Comprehend Compliance Issues in Leather, Footwear and Leather Goods Industries	<ol style="list-style-type: none"> 1. Comprehend environmental compliance issues 2. Comprehend waste and chemical handling management 3. Interpret national labour laws 	30
Total hours			60

Occupation specific competencies

Code	Unit of competency	Elements of competency	Duration (hours)
OU-LLG-PMGCO-01-L4-V1	Understand Pattern Making and CAD-CAM Operations	<ol style="list-style-type: none"> 1. Describe concept of pattern making 2. Identify basic requirements for CAD-CAM operations 3. Identify devices and hardware required for CAD-CAM operations 	35
OU-LLG- PMGCO -02-L4-V1	Carryout Manual Pattern Making Operations	<ol style="list-style-type: none"> 1. Prepare a mean forme 2. Develop standard / shell 3. Cut pattern from standard / shell 4. Cut bottom patterns 	45
OU-LLG- PMGCO -03-L4-V1	Prepare a Standard / Shell Using 3D Software	<ol style="list-style-type: none"> 1. Scan last 2. Develop a standard / shell 	50
OU-LLG- PMGCO -04-L4-V1	Perform Computer Aided Pattern Making Operations Using 2D Software	<ol style="list-style-type: none"> 1. Scan 2D standard / shell 2. Create new style lines 3. Prepare sectional patterns 	70
OU-LLG- PMGCO -05-L4-V1	Perform Pattern Grading	<ol style="list-style-type: none"> 1. Identify grading parameters 2. Carryout grading 3. Check and cut graded patterns 	45
OU-LLG- PMGCO -06-L4-V1	Perform Pattern Consumption	<ol style="list-style-type: none"> 1. Identify consumption parameters 2. Carryout consumption 3. Calculate pattern consumption 	15
Total Hours			260

Generic Units of Competencies

Unit Code and Title	GU-02-L1-V1: Apply Occupational Safety and Health (OSH) Procedure in Workplace
Unit Descriptor	<p>This unit covers the knowledge, skills and attitudes (KSA) required to apply occupational safety and health (OSH) procedure in the workplace.</p> <p>It specifically includes the task of identifying OSH policies and procedures, following OSH procedure, reporting hazards and risks, responding to emergencies and maintaining personal well-being.</p>
Nominal Hours	15 Hours
Elements of Competency	<p>Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables</p>
1. Identify OSH policies and procedures	<p>1.1. <u>OSH policies</u> and <u>safe operating procedures</u> are accessed and stated</p> <p>1.2. <u>Safety signs and symbols</u> are identified and followed</p> <p>1.3. Emergency response, evacuation procedures and other contingency measures are determined according to workplace requirements</p>
2. Follow OSH procedure	<p>2.1 <u>Personal protective equipment (PPE)</u> is selected and collected as required</p> <p>2.2 Personal protective equipment (PPE) is correctly used in accordance with organization OSH procedures and practices</p> <p>2.3 A clear and tidy workplace is maintained as per workplace standard</p> <p>2.4 PPE is maintained to keep them operational and compliant with OSH regulations</p>
3. Report hazards and risks	<p>3.1 <u>Hazards</u> and risks are identified, assessed and controlled</p> <p>3.2 Incidents arising from hazards and risks are reported to designated authority</p>
4. Respond to emergencies	<p>4.1 Alarms and warning devices are responded</p> <p>4.2 Workplace <u>emergency procedures</u> are followed</p> <p>4.3 <u>Contingency measures</u> during workplace accidents, fire and other emergencies are recognized and followed in accordance with organization procedures</p> <p>4.4 First aid procedures are applied during emergency situations</p>
5. Maintain personal well-being	<p>5.1 OSH policies and procedures are adhered to OSH awareness programs are participated in as per workplace guidelines and procedures.</p>

	<p>5.2 Corrective actions are implemented to correct unsafe condition in the workplace</p> <p>5.3 <u>“Fit to work” records</u> are updated and maintained according to workplace requirements</p>
Range of Variables	
Variables	Range (may include but not limited to):
1. OSH policies	<p>1.1. Bangladesh standards for OSH</p> <p>1.2. Fire Safety Rules and Regulations</p> <p>1.3. Code of Practice</p> <p>1.4. Industry Guidelines</p>
2. Safe operating procedures	<p>2.1 Orientation on emergency exits, fire extinguishers, fire escape, etc.</p> <p>2.2 Emergency procedures</p> <p>2.3 First Aid procedures</p> <p>2.4 Tagging procedures</p> <p>2.5 Use of PPE</p> <p>2.6 Safety procedures for hazardous substances</p>
3. Safety signs and symbols	<p>3.1 Direction signs (exit, emergency exit, etc.)</p> <p>3.2 First aid signs</p> <p>3.3 Danger Tags</p> <p>3.4 Hazard signs</p> <p>3.5 Safety tags</p> <p>3.6 Warning signs</p>
4. Personal Protective Equipment (PPE)	<p>4.1 Gas Mask</p> <p>4.2 Gloves</p> <p>4.3 Safety boots</p> <p>4.4 Face mask</p> <p>4.5 Overalls</p> <p>4.6 Goggles and safety glasses</p> <p>4.7 Sun block</p> <p>4.8 Chemical/Gas detectors</p>
5. Hazards	<p>5.1 Chemical hazards</p> <p>5.2 Biological hazards</p> <p>5.3 Physical Hazards</p> <p>5.4 Mechanical and Electrical Hazard</p> <p>5.5 Mental hazard</p> <p>5.6 Ergonomic hazard</p>
6. Emergency procedures	<p>6.1 Fire fighting</p> <p>6.2 Earthquake</p> <p>6.3 Medical and first aid</p> <p>6.4 Evacuation</p>

7. Contingency measures	7.1 Evacuation 7.2 Isolation 7.1 Decontamination
8. "Fit to Work" records	8.1 Medical Certificate every year 8.2 Accident reports, if any 8.3 Eye vision certificate
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 stated OSH policies and safe operating procedures 1.2 followed safety signs and symbols 1.3 used personal protective equipment (PPE) 1.4 maintained workplace clear and tidy 1.5 assessed and Controlled hazards 1.6 followed emergency procedures 1.7 followed contingency measures 1.8 implemented corrective actions
2. Underpinning knowledge	2.1 Define OSH 2.2 OSH Workplace Policies and Procedures 2.3 Work safety procedures 2.4 Emergency procedures 2.5 Hazard control procedure 2.6 Different types of hazards 2.7 PPE and there uses 2.8 Personal hygiene practices 2.9 OSH awareness
3. Underpinning skills	3.1 Accessing OSH policies 3.2 Using of PPE 3.3 Handling cleaning tools and equipment 3.4 Writing report 3.5 Responding to emergency procedures
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	5.1 Workplace

	5.2 Equipment and outfits appropriate in applying safety measures 5.3 Tools, equipment, materials and documentation required 5.4 OSH Policies and Procedures
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Unit Code and Title	GU-04-L3-V1: Lead Small Team
Unit Descriptor	<p>This unit covers the knowledge, skills and attitudes (KSAs) required to lead small team</p> <p>It specifically includes the task of providing team leadership; assigning responsibilities; setting performance expectations for team members; and supervising team performance.</p>
Nominal Hours	20 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Provide team leadership	<p>1.1. <u>Work requirements</u> are identified and presented to team members.</p> <p>1.2. Reasons for instructions and requirements are communicated to team members.</p> <p>1.3. <u>Team members' queries and concerns</u> are recognized, discussed and dealt with.</p>
2. Assign responsibilities	<p>2.1 Duties, and responsibilities are allocated having regard to the skills, knowledge and attitudes required to properly undertake the assigned task.</p> <p>2.2 Duties are allocated having regard to individual preference, domestic and personal considerations, whenever possible.</p>
3. Set performance expectations for team members	<p>3.1 Performance expectations are established based on client needs and according to assignment requirements.</p> <p>3.2 Performance expectations are based on individual team members' duties and area of responsibility.</p> <p>3.3 Performance expectations are discussed and directed to implement in the workplace.</p>
4. Supervise team performance	<p>4.1 <u>Monitoring of performance</u> are taken place against defined performance criteria and / or assignment instructions and corrective action taken if required.</p> <p>4.2 Team members are provided <u>feedback</u>, positive support and advice on strategies to overcome any deficiencies.</p> <p>4.3 <u>Performance issues</u> which cannot be rectified or addressed within the team are referenced to appropriate personnel.</p> <p>4.4 Team members are kept informed of any changes in the priority allocated to assignments or tasks which might impact on clients' / customers' needs and satisfaction.</p> <p>4.5 Team operations are monitored to ensure that employer / client needs and requirements are met.</p>

	<p>4.6 Follow-up communication is provided on all issues affecting the team.</p> <p>4.7 All relevant documentation is completed.</p>
Range of Variables	
Variables	Range (may include but not limited to):
1. Work requirements	<p>1.1 Client Profile</p> <p>1.2 Assignment instructions</p>
2. Team member's queries and concerns	<p>2.1 Roster</p> <p>2.2 Shift details</p>
3. Monitoring of performance	<p>3.1 Formal process</p> <p>3.2 Informal process</p>
4. Feedback	<p>4.1 Formal process</p> <p>4.2 Informal process</p> <p>4.3 Sandwich process</p>
5. Performance issues	<p>5.1 Work output</p> <p>5.2 Work quality</p> <p>5.3 Team participation</p> <p>5.4 Compliance with workplace protocols</p> <p>5.5 Safety</p> <p>5.6 Customer service</p>
Evidence Guide	
The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <p>1.1 Maintained or improved individuals and / or team performance given a variety of possible scenario.</p> <p>1.2 Assessed and monitored team and individual performance against set criteria.</p> <p>1.3 Represented concerns of a team and individual to next level of management or appropriate specialist and to negotiate on their behalf.</p> <p>1.4 Allocated duties and responsibilities, having regard to individual's knowledge, skills and aptitude and the needs of the tasks to be performed.</p> <p>1.5 Set and communicated performance expectations for a range of tasks and duties within the team and provided feedback to team members.</p>

2. Underpinning knowledge	2.1 Company policies and procedures. 2.2 Relevant legal requirements. 2.3 How performance expectations are set. 2.4 Methods of monitoring performance. 2.5 Client expectations. 2.6 Team members' duties and responsibilities
3. Underpinning skills	3.1 Counselling informal performance skills. 3.2 Building team skills. 3.3 Negotiating skills
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1 Workplace (actual or simulated) 5.2 Tools, equipment and facilities appropriate to processes or activity 5.3 Materials relevant to the proposed activity 5.4 Equipment and outfits appropriate in applying safety measures 5.5 Relevant drawings, manuals, codes, standards and reference material
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Sector Specific Units of Competencies

Unit Code and Title	SU-LLG-01-L1-V1: Work in the Leather, Footwear and Leather Goods Industries
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to work in the leather, footwear and leather goods industries. It specifically includes – identify positions, job roles and responsibilities; identify materials used in leather and leather goods industries; and explain workflow of making footwear and leather goods.
Nominal Hours	30 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Identify positions, job roles and responsibilities	1.1 Positions, job roles and responsibilities in the leather, footwear and leather goods industries are identified. 1.2 Positions and job roles are differentiated clearly with key responsibilities.
2. Identify materials used in leather, footwear and leather goods industries	2.1 <u>Raw materials used in the leather industries</u> are identified. 2.2 <u>Materials used in the footwear industries</u> are identified. 2.3 <u>Materials used in the leather goods industries</u> are identified.
3. Explain workflow of making footwear and leather goods	3.1 <u>Workflow of footwear making</u> is identified and recognized. 3.2 <u>Workflow of leather goods making</u> is identified and recognized.
Range of Variables	
Variables	Range (may include but not limited to):
1. Raw materials used in leather industries	1.1 Cow hides 1.2 Buffalo hides 1.3 Goat skins 1.4 Sheep skins
2. Materials used in footwear industries	2.1 Upper materials 2.2 Lining materials 2.3 Interlining materials 2.4 Reinforcement materials 2.5 Threads 2.6 Accessories 2.7 Adhesives 2.8 Insole materials 2.9 Soling materials

3. Materials used in leather goods industries	3.1 Upper materials 3.2 Lining materials 3.3 Interlining materials 3.4 Reinforcement materials 3.5 Accessories 3.6 Adhesives 3.7 Threads
4. Workflow of footwear making	4.1 Designing 4.2 Pattern making 4.3 Cutting 4.4 Preparation and setting 4.5 Sewing / upper closing 4.6 Lasting and making 4.7 Shoe finishing 4.8 Quality control 4.9 Packaging
5. Workflow of leather goods making	5.1 Designing 5.2 Pattern making 5.3 Cutting 5.4 Setting and assembling 5.5 Finishing 5.6 Quality control 5.7 Packaging
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Identified raw materials used in leather industries. 1.2 Identified materials used in leather goods industries. 1.3 Identified materials used in footwear industries.
2. Underpinning knowledge	2.1 Job roles and responsibilities. 2.2 Raw materials used in leather industries. 2.3 Materials used in footwear industries. 2.4 Materials used in leather goods industries.
3. Underpinning skills	3.1. Interpreting job roles and responsibilities. 3.2. Identifying raw materials used in leather industries. 3.3. Identifying materials used in footwear industries. 3.4. Identifying materials used in leather goods industries. 3.5. Recognizing workflow of footwear and leather goods making.

4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1. Workplace (actual or simulated) 5.2. Manuals 5.3. Drawings 5.4. Specifications
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral Questioning
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Unit Code and Title	SU-LLG-02-L2-V1: Comprehend Compliance Issues in Leather, Footwear and Leather Goods Industries
Unit Descriptor	<p>This unit covers the skills, knowledge and attitude required to comprehend compliance issues in leather, footwear and leather goods industries.</p> <p>It specifically includes - comprehending environmental compliance issues; comprehend waste and chemical handling management; and interpret national labor laws.</p>
Nominal Hours	30 Hours
Elements of Competency	<p>Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables</p>
1. Comprehend environmental compliance issues	<p>1.1. Environmental compliance issues are comprehended.</p> <p>1.2. <u>Code of Conduct (CoC)</u> is identified as per leather industries.</p>
2. Comprehend waste and chemical handling management	<p>2.1 <u>Health & safety issues</u> are comprehended as per industry guideline.</p> <p>2.2 Waste and chemical handling procedures are interpreted</p>
3. Interpret national labour laws	<p>3.1 National labour laws and regulation related to workplace issues are comprehended.</p> <p>3.2 Application of labour laws in the workplaces is identified</p>
Range of Variables	
Variables	Range (may include but not limited to):
1. Code of conduct (CoC)	<p>1.1. Child labor</p> <p>1.2. Forced labor</p> <p>1.3. Health & safety</p> <p>1.4. Compensation</p> <p>1.5. Working hours</p> <p>1.6. Discrimination</p> <p>1.7. Maternity benefit</p>
2. Health & safety issues	<p>2.1 Mechanical</p> <p>2.2 Physical</p> <p>2.3 Chemical</p> <p>2.4 Ergonomic</p> <p>2.5 Biological</p> <p>2.6 Psychosocial</p>
<p>Evidence Guide</p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency</p>	

1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <p>1.1 Interpreted code of conduct.</p> <p>1.2 Illustrated Health & Safety issues.</p> <p>1.3 Interpreted waste and chemical handling procedures.</p> <p>1.4 Applied labour laws as per industry construction</p>
2. Underpinning knowledge	<p>2.1 Environmental compliance issues.</p> <p>2.2 Code of Conduct (CoC).</p> <p>2.3 Waste and chemical handling procedures.</p> <p>2.4 National labour laws.</p>
3. Underpinning skills	<p>3.1 Interpreting code of conduct.</p> <p>3.2 Illustrating Health & safety issues.</p> <p>3.3 Interpreting waste and chemical handling procedures.</p> <p>3.4 Applying labour laws as per industry construction</p>
4. Required attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Sincere and honest to duties</p> <p>4.3 Promptness in carrying out activities</p> <p>4.4 Environmental concerns</p> <p>4.5 Eagerness to learn</p> <p>4.6 Tidiness and timeliness</p> <p>4.7 Respect of peers and seniors in workplace</p> <p>4.8 Communicate with peers and seniors in workplace</p>
5. Resource implications	<p>The following resources must be provided:</p> <p>5.1 Workplace (actual or simulated).</p> <p>5.2 Physical facilities appropriate to perform activities.</p> <p>5.3 Materials consumable to perform activities.</p>
6. Methods of assessment	<p>Competency should be assessed by:</p> <p>6.1 Written test</p> <p>6.2 Demonstration</p> <p>6.3 Oral Questioning</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in NSDA accredited assessment centre</p> <p>7.2 Assessment should be done by a NSDA certified/nominated assessor</p>
<p>Accreditation Requirements</p> <p>Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

Occupation Specific Units of Competencies

Unit Code and Title	OU-LLG-PMGCO-01-L4-V1: Understand Pattern Making and CAD-CAM Operations
Unit Descriptor	<p>This unit covers the knowledge, skills and attitudes required to understand pattern making and CAD-CAM operations.</p> <p>It specifically includes – describe concepts of pattern making; identify basic requirements of CAD-CAM operations; and identify devices and hardware required for CAD-CAM operations.</p>
Nominal Hours	35 Hours
Elements of Competency	<p>Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables</p>
1. Describe concept of pattern making	1.1 Basic <u>styles of footwear</u> are identified. 1.2 <u>Types of lasts</u> are identified and categorized. 1.3 <u>Reference points for last</u> are identified. 1.4 <u>Shoe constructions</u> are explained and illustrated. 1.5 Concept of pattern making is described.
2. Identify basic requirements for CAD-CAM operations	2.1 CAD-CAM operations are identified. 2.2 <u>Functions of CAD-CAM systems</u> are identified and described. 2.3 <u>Basic CAD-CAM software</u> is identified
3. Identify devices and hardware required for CAD - CAM operations	3.1 <u>CAD-CAM devices</u> required for operation are identified. 3.2 Use of <u>CAD-CAM hardware</u> is carried out.
Range of Variables	
Variables	Range (may include but not limited to):
1. Styles of footwear	1.1 Oxford 1.2 Derby 1.3 Court 1.4 Slip-on / Casual 1.5 Moccasin 1.6 Boot 1.7 Sports 1.8 Sandals

2. Shoe construction	2.1 Cemented 2.2 Welted 2.3 Moccasin 2.4 String 2.5 Strobel 2.6 Californian 2.7 Veldschoen
3. Types of lasts	3.1 Solid block 3.2 Scoop 3.3 V-hinge 3.4 C-hinge 3.5 Telescopic
4. Reference points of lasts	4.1 Toe point 4.2 Inside ball point 4.3 Outside ball point 4.4 Instep point 4.5 Waist point 4.6 Vamp point 4.7 Seat point 4.8 Back height point 4.9 Feather edge 4.10 Cone point
5. Functions of CAD-CAM systems	5.1 Designing 5.2 Pattern making 5.3 Pattern engineering 5.4 Grading 5.5 Pattern cutting 5.6 Consumption of materials
6. Basic CAD-CAM software	6.1 ShoeMaster 6.2 ShoeMaker 6.3 Romans CAD 6.4 Rhino 6.5 Fast shoe 6.6 Horse shoe 6.7 Dimension 6.8 ICad 3D+
7. CAD-CAM devices	7.1 Mouse 7.2 2-D Scanner 7.3 3-D last Scanner 7.4 Touch pad 7.5 Touch screen 7.6 Keyboard

8. CAD-CAM hardware	8.1 System unit 8.2 Storage device (SSD) 8.3 Dongle 8.4 Monitor 8.5 Printer 8.6 Plotter with accessories
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Identified basic types of footwear 1.2 Identified types of last and their reference points 1.3 Identified CAD-CAM software, devices and hardware 1.4 Used CAD-CAM hardware
2. Underpinning knowledge	2.1 Basic styles of footwear and shoe construction 2.2 Types of lasts and their reference points 2.3 Concept of pattern making 2.4 Functions of CAD-CAM system 2.5 CAD-CAM devices and hardware
3. Underpinning skills	3.1 Identifying basic styles of footwear 3.2 Identifying types of lasts and their reference points 3.3 Identifying basic CAD-CAM software, devices and hardware 3.4 Using CAD-CAM hardware
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1 Workplace (actual or simulated) 5.2 Computer / laptop 5.3 CAD-CAM system 5.4 Measuring tape 5.5 Stationary 5.6 Learning manual
6. Methods of assessment	Competency should be assessed by: 6.1 Written test

	6.2 Demonstration 6.3 Oral questioning
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements <p>Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

Unit Code and Title	OU-LLG- PMGCO -02-L4-V1: Carryout Manual Pattern Making Operations
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to carry out manual pattern making operations. It specifically includes – prepare a mean forme, develop standard / shell, cut pattern from standard / shell and cut bottom patterns
Nominal Hours	45 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Prepare a mean forme	1.1 Mean forme making process is identified and described. 1.2 Last, tools, pattern paper and masking tape are identified and selected. 1.3 Mean forme making is carried out as per job specification.
2. Develop standard / shell	2.1 <u>Types of standard / shell</u> are identified. 2.2 Upper standard / shell making is performed. 2.3 Lining standard / shell making is carried out.
3. Cut pattern from standard / shell	3.1 Upper sectional patterns are cut following upper standard. 3.2 Lining sectional patterns are cut following lining standard. 3.3 Reinforcement patterns are cut following upper standard.
4. Cut bottom patterns	4.1 Insole pattern are prepared and cut following last 4.2 Outsole pattern are cut following insole pattern 4.3 In-sock pattern is cut following insole pattern 4.4 Shank board pattern is cut following insole pattern 4.5 Heel pattern is cut following insole pattern 4.6 Bottom filler pattern following insole pattern
Range of Variables	
Variables	Range (may include but not limited to):
1. Types of standard / shell	1.1 Upper standard / shell 1.2 Lining standard / shell
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Carried out mean forme making correctly. 1.2 Performed upper and lining standard / shell making per job specifications. 1.3 Carried out cutting of piece pattern (upper, lining and reinforcement).

2. Underpinning knowledge	2.1 Mean forme making. 2.2 Upper and lining standard / shell making. 2.3 Reinforcement pattern pieces making. 2.4 Pattern cutting.
3. Underpinning skills	3.1 Carrying out mean forme making. 3.2 Performing standard / shell making. 3.3 Developing reinforcement pattern. 3.4 Cutting piece patterns (upper, lining and reinforcement).
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Sincere and honest to duties 4.3 Promptness in carrying out activities 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect of peers and seniors in workplace 4.8 Communicate with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1 Tools, equipment and physical facilities appropriate to perform activities. 5.2 Materials, consumables to perform activities
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration 6.3 Oral questioning
7. Context of assessment	7.1 Competency assessment must be done in NSDA accredited assessment centre 7.2 Assessment should be done by a NSDA certified/nominated assessor

Accreditation Requirements

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Unit Code and Title	OU-LLG- PMGCO -03-L4-V1: Prepare a Standard / Shell Using 3D Software
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to prepare a standard / shell using 3D software. It specifically includes - digitize last; and develop a standard / shell
Nominal Hours	50 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Scan last	1.1 Hole on back centre line is made by drill machine as per pin diameter. 1.2 Last is placed on 3D scanning chamber by means of pin hole. 1.3 <u>Parameter for scanning</u> is set. 1.4 Scanning is carried out. 1.5 Scanned last is converted to 3D last (.elast, .stl).
2. Develop a standard / shell	2.1 3D last (.elast, .stl) is imported / opened. 2.2 Last reference points are selected. 2.3 Guidelines are selected and followed. 2.4 <u>Style lines</u> are drawn and the standard / shell on 3D last (.elast, .stl) is completed.
Range of Variables	
Variables	Range (may include but not limited to):
1. Parameter for scanning	1.1 Scanning zone 1.2 Number of zone 1.3 Number of points per zone 1.4 Percentage of sensitivity
2. Style lines	2.1 Top line 2.2 Quarter 2.3 Vamp 2.4 Apron 2.5 Eyelet piece 2.6 Vamp strap 2.7 Back belt 2.8 Counter 2.9 Mudguard 2.10 Tongue 2.11 Toe cap 2.12 Backstrap

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency

1. Critical aspects of competency	<p>Assessment required evidence that the candidate:</p> <p>1.1 Set the parameter and carried out digitizing.</p> <p>1.2 Converted scanned last to 3D last (.elast, .stl).</p> <p>1.3 Selected the last reference points.</p> <p>1.4 Drew style lines and completed the standard / shell</p>
2. Underpinning knowledge	<p>2.1 Parameters for scanning.</p> <p>2.2 Digitizing.</p> <p>2.3 Guidelines for last reference points.</p> <p>2.4 Style lines.</p>
3. Underpinning skills	<p>3.1 Setting the parameter for scanning.</p> <p>3.2 Carrying out digitizing.</p> <p>3.3 Converting scanned last to 3D last (.elast, .stl).</p> <p>3.4 Selecting the last reference points.</p> <p>3.5 Drawing style lines and completing the standard / shell on 3D last (.elast, .stl).</p>
4. Required attitude	<p>4.1 Commitment to occupational health and safety</p> <p>4.2 Environmental concerns</p> <p>4.3 Eagerness to learn</p> <p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p> <p>4.6 Communication with peers and seniors in workplace</p>
5. Resource implications	<p>The following resources must be provided:</p> <p>5.1 Workplace (actual or simulated)</p> <p>5.2 Computer / laptop</p> <p>5.3 CAD-CAM system</p>
6. Methods of assessment	<p>Competency should be assessed by:</p> <p>6.1 Written test</p> <p>6.2 Demonstration</p> <p>6.3 Oral questioning</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in NSDA accredited assessment centre</p> <p>7.2 Assessment should be done by a NSDA certified/nominated assessor</p>

Accreditation Requirements

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Unit Code and Title	OU-LLG- PMGCO -04-L4-V1: Perform Computer Aided Pattern Making Operations Using 2D Software
Unit Descriptor	<p>This unit covers the knowledge, skills and attitudes required to perform computer aided pattern making operations using 2D software.</p> <p>It specifically includes - digitize 2D standard / shell; create new style lines; and prepare sectional patterns.</p>
Nominal Hours	70 Hours
Elements of Competency	<p>Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables</p>
1. Scan 2D standard / shell	1.1 Standard / shell is developed and prepared for scanning. 1.2 Scanner is initialized 1.3 Standard / shell is scanned in <u>suitable format</u>
2. Create new style lines	2.1 Import scanned standard / shell 2.2 New style lines are created 2.3 Duplicate line is created 2.4 New offset line is made 2.5 Tied offset line is prepared 2.6 Mirror line and tied mirror line is created 2.7 <u>Line modification</u> is carried out
3. Prepare sectional patterns	3.1 Working sequence of CAD-CAM is identified 3.2 New piece is created 3.3 <u>Pattern engineering</u> is carried out 3.4 Final sectional pattern making is completed 3.5 Sectional pattern is cut using Computer Aided Machine
Range of Variables	
Variables	Range (may include but not limited to):
1. suitable format	1.1 .JPG 1.2 .gif 1.3 .tiff
2. Line modification	2.1 Edit nodes 2.2 Modify nodes 2.3 Modify line 2.4 Smoothen line 2.5 Tide / offset line 2.6 Join line 2.7 Split line 2.8 Extended line 2.9 Mirror line

3. Pattern engineering	3.1 Allowance (lasting, setting / underlay, folding, seam, trimming) 3.2 Punch (eyelet punch, decorative punch, branding of shoe) 3.3 Marking (setting, stitch marking, in / out mark, centre mark, chamfer cut for setting on folding) 3.4 Text (size, piece name, style name, article name, date, design name)
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Scanned 2D standard / shell 1.2 Created and duplicated style lines 1.3 Created offset lines 1.4 Performed pattern engineering
2. Underpinning knowledge	2.1 Scan 2D standard / shell 2.2 Style lines and line modification 2.3 Working sequence of CAD-CAM 2.4 Pattern engineering 2.5 Piece pattern cutting
3. Underpinning skills	3.1 Scanning 2D standard / shell 3.2 Creating, duplicating and making style and offset lines 3.3 Performing pattern engineering 3.4 Cutting sectional patterns using plotter
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn 4.4 Tidiness and timeliness 4.5 Respect for rights of peers and seniors in workplace 4.6 Communication with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.1 Workplace (actual or simulated) 5.2 Computer / laptop 5.3 CAD-CAM system 5.4 Plotter 5.5 Measurement chart 5.6 Stationary 5.7 Learning manual
6. Methods of assessment	Competency should be assessed by: 6.1 Written test 6.2 Demonstration

	6.3 Oral questioning
7. Context of assessment	<p>7.3 Competency assessment must be done in NSDA accredited assessment centre</p> <p>7.4 Assessment should be done by a NSDA certified/nominated assessor</p>
<p>Accreditation Requirements</p> <p>Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF/BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.</p>	

Unit Code and Title	OU-LLG- PMGCO -05-L4-V1: Perform Pattern Grading and Cutting
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to perform pattern grading and cutting. It specifically includes – identify grading parameters; carryout grading; and check and cut graded patterns.
Nominal Hours	50 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Identify grading parameters	1.1 <u>Types of grading</u> are identified 1.2 <u>Grading parameters</u> are identified and defined. 1.3 Setting rules and default grade type are followed. 1.4 Grade setting, and shell grade rules are followed and maintained. 1.5 Measurement differences between the sizes are calculated and recorded.
2. Carryout grading	2.1 <u>Grading rules</u> are selected and parameters are applied. 2.2 Last specifications are provided 2.3 Model size and size range is selected. 2.4 Dialog box is followed as per job specification.
3. Check and cut graded patterns	3.1 Restriction grading areas are checked. 3.2 Pattern engineering points are followed. 3.3 Graded patterns are prepared and saved. 3.4 Graded patterns are cut using Plotter
Range of Variables	
Variables	Range (may include but not limited to):
1. Types of grading	1.1 Straight 1.2 Group 1.3 Restriction
2. Grading parameters	2.1 Stick length 2.2 Bottom length 2.3 Ball girth 2.4 Upper girth 2.5 Bottom width 2.6 Length increment 2.7 Girth increment
3. Grading rules	3.1 English / UK system 3.2 US system 3.3 Paris point / French system 3.4 Japanese system

	3.5 Mondo Point System
Evidence Guide The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Selected grading rules. 1.2 Applied grading parameters. 1.3 Checked restricted grading areas. 1.4 Followed pattern engineering points. 1.5 Cut graded patterns using plotter
2. Underpinning knowledge	2.1 Grading parameters. 2.2 Grading rules. 2.3 Size ranges. 2.4 Restricted grading areas. 2.5 Pattern engineering points.
3. Underpinning skills	3.1 Calculating difference between sizes. 3.2 Identifying and selecting grading rules. 3.3 Applying grading parameters. 3.4 Checking restricted grading areas. 3.5 Following pattern engineering points. 3.6 Cutting graded patterns using plotter
4. Required attitude	4.7 Commitment to occupational health and safety 4.8 Environmental concerns 4.9 Eagerness to learn 4.10 Tidiness and timeliness 4.11 Respect for rights of peers and seniors in workplace 4.12 Communication with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.8 Workplace (actual or simulated) 5.9 Computer / laptop 5.10 CAD-CAM system 5.11 Plotter 5.12 Measurement chart 5.13 Stationary 5.14 Learning manual
6. Methods of assessment	Competency should be assessed by: 6.4 Written test 6.5 Demonstration 6.6 Oral questioning
7. Context of assessment	7.5 Competency assessment must be done in NSDA accredited assessment centre

	7.6 Assessment should be done by a NSDA certified/nominated assessor
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Accreditation Requirements

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Unit Code and Title	OU-LLG- PMGCO -06-L4-V1: Perform Pattern Consumption
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to Perform Pattern Consumption It specifically includes – identify consumption parameters, carryout consumption and calculate pattern consumption.
Nominal Hours	15 Hours
Elements of Competency	Performance Criteria <u>Bold & Underlined</u> terms are elaborated in the Range of Variables
1. Identify consumption parameters	1.1 <u>Types of consumption</u> are identified 1.2 <u>Consumption parameters</u> are identified and defined. 1.3 Setting rules are followed.
2. Carryout consumption	2.1 <u>Consumption rules</u> are selected and parameters are applied. 2.2 Material specifications are provided 2.3 Auto nesting are performed as per efficiency
3. Calculate pattern consumption	3.1 Unit conversion is performed 3.2 Total consumption is calculated as per job requirement. 3.3 Data is exported to suitable format
Range of Variables	
Variables	Range (may include but not limited to):
1. Types of consumption	1.4 Linear 1.5 Scientific Leather Measurement (SLM)
2. Consumption parameters	2.1 Stretch and tight direction 2.2 Materials width 2.3 Leather grade
3. Consumption rules	3.1 Interlocking distance 3.2 Nesting angle 3.3 Parallelogram for piece 3.4 Pair basis for leather
Evidence Guide	
The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency	
1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Selected consumption rules. 1.2 Applied consumption parameters. 1.3 Checked restricted consumption areas. 1.4 Followed pattern engineering points. 1.5 Cut graded patterns using plotter

2. Underpinning knowledge	2.1 consumption parameters. 2.2 consumption rules. 2.3 Size ranges. 2.4 Restricted grading areas. 2.5 Pattern engineering points.
3. Underpinning skills	3.7 Calculating difference between sizes. 3.8 Identifying and selecting consumption rules. 3.9 Applying consumption parameters. 3.10 Checking restricted consumption areas. 3.11 Following pattern engineering points. 3.12 Cutting consumption patterns using plotter
4. Required attitude	4.13 Commitment to occupational health and safety 4.14 Environmental concerns 4.15 Eagerness to learn 4.16 Tidiness and timeliness 4.17 Respect for rights of peers and seniors in workplace 4.18 Communication with peers and seniors in workplace
5. Resource implications	The following resources must be provided: 5.15 Workplace (actual or simulated) 5.16 Computer / laptop 5.17 CAD-CAM system 5.18 Plotter 5.19 Measurement chart 5.20 Stationary 5.21 Learning manual
6. Methods of assessment	Competency should be assessed by: 6.7 Written test 6.8 Demonstration 6.9 Oral questioning
7. Context of assessment	7.7 Competency assessment must be done in NSDA accredited assessment centre 7.8 Assessment should be done by a NSDA certified/nominated assessor
Accreditation Requirements Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF/BNQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.	

Experts Involved

Industry and subject matter experts who provided their valuable inputs to construct this Competency Standard (Mar- Apr, 2018)

Name	Organisation	Designation
Mr. Md. Mominul Ahsan	Industry Skills Council (ISC) - Leather & Leather Goods	CEO
Mr. Md. Razya Rahim	Apex Footwear Ltd.	General Manager- Product Development
Mr. Shamal Chandra Sarkar	Apex Footwear Ltd.	Assistant General Manager - PD
Mr. Md. Mostofa Shahidul	Apex Footwear Ltd.	Assistant General Manager- Product Development
Mr. Md. Shahidur Rahman	Apex Footwear Ltd.	Deputy Manager- Product Development
Mr. Md. Shamim Al-Mamun	Edison Footwear Ltd.	Manger- Product Development
Mr. Md. Emarat Khan	Edison Footwear Ltd.	Assistant Manager - Product Development
Mr. Md. Salim Reza	Apex Footwear Ltd.	Deputy Manager - Product Development (Commercialisation)
Mr. Md. Rakibul Islam	Apex Footwear Ltd.	Design & Developer (Product Development)
Md. Abu Talha	Leatherex Footwear Ltd.	Manager (R&D Merchandising)
Md. Golam Shah Newaz	US Bangla Leather Ltd.	General Manager
Mr. Foysal Hossain	FB Footwear Ltd.	Production Manager
Mr. David King	British Council - SD03	Team Leader
Mr. Sobur Ahmed	British Council - SD03	National Subject Matter Consultant- Leather and Footwear

Development Workshop

Working Group formation and Competency Standard Development Workshop participants (17th Apr 2018):

Name	Organisation	Designation
Mr. Md. Mominul Ahsan	Industry Skills Council (ISC) - Leather & Leather Goods	CEO
Mr. Md. Golam Shah Newaz	US Bangla Leather Ltd.	General Manager
Mr. Md. Rakibul Islam	Apex Footwear Ltd.	Design & Developer (Product Development)
Mr. Md. Emarat Khan	Edison Footwear Ltd.	Assistant Manager - Product Development
Mr. Raihan Ahmed	Italy Footwear Ltd.	Assistant Manager (PD, Planning & Merchandising)
Mr. Md. ASM Nasim	LFMEAB – SEIP	Lead Trainer
Mr. Md. Arifur Rahman Bhuiyan	LFMEAB - SEIP	Coordinator - Training, Job Placement and Database
Mr. Syed Nasir Ershad	SEIP	AEPD (Public-1)
Mr. Md. Ahsan Habib	SEIP	TVET Specialist
Mr. Mohiuzzaman	SEIP	Course Specialist
Mr. David King	British Council - SD03	Team Leader
Mr. Sobur Ahmed	British Council - SD03	National Subject Matter Consultant- Leather and Footwear

Validation Workshop

Competency Standard Validation Workshop participants (06th May 2018):

Name	Organisation	Designation
Mr. Md. Mominul Ahsan	Industry Skills Council (ISC) - Leather & Leather Goods	CEO
Mr. Md. Golam Shah Newaz	US Bangla Leather Ltd.	General Manager
Mr. Samoren Ghosh	Royal Footwear Ltd.	Manager - Product Development
Mr. Md. Rakibul Islam	Apex Footwear Ltd.	Design & Developer (Product Development)
Mr. Raihan Ahmed	Italy Footwear Ltd.	Assistant Manager (PD, Planning & Merchandising)
Mr. Md. Mashiur Rahman	LFMEAB - SEIP	Chief Coordinator
Mr. Md. Arifur Rahman Bhuiyan	LFMEAB - SEIP	Coordinator - Training, Job Placement and Database
Mr. Syed Nasir Ershad	SEIP	AEPD (Public-1)
Mr. Md. Ahsan Habib	SEIP	TVET Specialist
Mr. Mohiuzzaman	SEIP	Course Specialist
Mr. David King	British Council - SD03	Team Leader
Mr. Sobur Ahmed	British Council - SD03	National Subject Matter Consultant- Leather and Footwear

Validation of Competency Standard

The Competency Standards for National Skills Certificate in Pattern Making, Grading and CAD-CAM Operations, Level- 4 is validated by NSDA 26 September 2023.

List of Members

Sl No	Name and Address	Position in the committee	Signature
1.	Md. Mominul Ahsan, CEO, Industry Skills Council (ISC) - Leather & Leather Goods	Chairperson	
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Minutes of the Competency Standard Validation Workshop on Pattern Making, Grading and CAD-CAM Operations, Level-4

Chairman	: Mr. Md Mominul Ahsan, Chairperson, Leather and Leather Goods ISC
Date	: 26 October 2023
Time	: 9:00 am - 4:00 pm
Place	: ISC Conference Room, NSDA, Biniyog Bhaban, Agargaon, Dhaka-1207

The Chairman inaugurated the workshop by welcoming the expert participants attended in the workshop. He urges the participants to share their expert opinion to make the standard effective, job market responsive and updated one. During the day-long workshop, the competency standard of Pattern Making, Grading and CAD-CAM Operations, Level-4 occupation was reviewed, modified and finalized in detail. The following changes and modification were made to validate and finalize the competency standard.

Serial No.	Content of validation	Whether it was appropriate		What actions have been taken if not appropriate?
		Yes	No	
1.	Name and level of occupation	Yes		Pattern Making, Grading and CAD-CAM Operations, Level-4
2.	Nominal Hour	Yes		360 hours
3.	Unit of Competency		No	At Occupation Units following changes are made:
4.	Element		No	Proper refinement of required elements has been achieved by keeping consistent elements.
5.	Performance Criteria		No	Necessary refinement of performance criteria has been achieved.
6.	Variables		No	Appropriate addition, modification and refinement of variables has been done keeping in view the performance criteria.
7.	Critical Aspect of Competence		No	Appropriate changes have been made in the critical aspect of competency as per the change of units.
8.	Underpinning knowledge		No	Necessary addition, changings and refinements have been made.
9.	Underpinning Skills		No	Necessary added, changes and refinements have been made.
10.	Attitude	Yes		
11.	Resources	Yes		

12.	Assessment methods	Yes		
13.	Others			<ul style="list-style-type: none"> ▪ The nominal hours of the units of competencies have been rescheduled for content consideration. ▪ Overall, the occupation has been included in Level-4 according to NSQF (BNQF 1-6).

Through the above activities, the Competency Standard has been finalized and validated as “**Pattern Making, Grading and CAD-CAM Operations, Level-4**”

Chairman

Committee on Standard and Curriculum Validation

Chairperson

Leather and Leather Goods ISC