



**Government of the People's Republic of Bangladesh
Skills Development Project**

National Competency Standards for Sewing Machine Operation

Qualification Title: **National Skills Certificate-I in Sewing Machine
Operation (RMG Sector)**

Qualification Code: **RMGSMO30112**



Bangladesh Technical Education Board

JUNE 2013

Copyright

The National Competency Standard for **Sewing Machine Operation** (NSC-I) is a referral document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the base document for providing trainings consistent with existing quality assurance systems.

This document is owned by the Government of the People's Republic of Bangladesh. All Bangladesh national public and private institutions may use the information in without restriction for activities benefitting Bangladesh.

Other interested parties must obtain permission from the owner of this document for reproduction of information in any manner in whole or in part of this Skills Standard, in English or other languages.

This document is available on a cost recovery basis at:

*Bangladesh Technical Education Board
(BTEB)
Agargaon, Sheer-E-Bangla Nagar
Dhaka -1207, Bangladesh
Telephone: +88 02 81 2056
Fax: +88 02 8113345
Email: bteb@citech.net
www.bteb.gov.bd*

Approval Sheet

The National Competency Standards for **National Skills Certificate-I in Sewing Machine Operation (Ready-Made Garments)** Qualification is a document developed by the Technical sub Committee for Sewing Machine Operation under the Skills Development Project ADB Loan 2425 – BAN (SF).

It was approved by the Bangladesh Technical Education Board (BTEB) upon the endorsement of the Sector Working Committee at a meeting held on 08 April 2012 at the office of the Industry Skills Council .3

The Standard was also approved by Standard and Curriculum Development Committee (SCDC) on 16.06. 2013 at BTEB - CBT Cell.

Honorable members of the SCDC

1	Shameem Ahmed (Team Leader) Vice-President (Finance), BKMEA Director, Miswar Hosiery Mills (Pvt.) Limited Kitubail, Ramarbagh, Fatullah, Narayangonj Phone-7671123, 7634629, 95585233, 9562446, 7562582 Cell-017115820347 Email- shameen.ahmed@miswar.com Shameen251@yahoo.com	Chairperson
2	Nashiruddin Mia B.Sc. Engineer, Textile & Post Graduate in Industrial Management Director, One Composite Mills Ltd.	Member
3	Md. Zakaria B.Sc. in Textile, Chief Executive Officer(Marketing & Merchandising) M D Knit Fashion, A/22 & 15, BSCIC I/W, Fatullah, Naraynganj Phnoe-7672981-2, 7671112-3 Cell-01611428649	Member
4	Mr. Alagir Kabir Managing Director, K.A.S Kintwear Ltd., B/24/A, Malibag Chowdhury Para, Dhaka Phone-9336480, 8358298 Cell-01713009551	Member
5	Mr. Md. Ruhul Amin Assistant Director, Directorate of Technical Education Cell-01911227578	Member
6	Md. Rafiqul Islam Assistant Director, Bureau of Manpower Employment & Training Phone-9361427 Cell-01914218180	Member
7	Eng. Allauddin Khalifa Evaluation Officer, BTEB Cell-01715199194	Member

- Developed by: **Mr. Ahsan Habib**
Chairman
On behalf of RMG *Industry* Skills Council
- Endorsed by: **Mr. Mohammad Hatem**
Co- Chairman
RMG Sector Working Committee
- Mr. Riaz-Bin-Mahmood**
Co- Chairman
RMG Sector Working Committee
- Under the guidance of: **Chowdury Mufad Ahmed**
Project Director
Skills Development Project
- Coordinated by: **Md. Nurul Haque**
Deputy Director(training)
Skills Development Project
- Supervised by: **Dr. Mohammed Ali**
National Consultant
Skills Development Project
- Approved by: **Prof. Md. Abul Kashem**
Chairman
Bangladesh Technical Education Board

Preface

The TVET system has a large role to play in economic growth and social development as workforce provider to the labor market and as provider of skills to those who are looking for employment. In the case of Bangladesh, the TVET sector needs major reforms to ensure that issues of quality and capacity, relevance, and access are properly addressed.

The Directorate of Technical Education (DTE) with funding from the Asian Development Bank (ADB), Swiss Agency Development for Cooperation SDC and the Government of Bangladesh (GoB) is implementing a project known as Skills Development Project (SDP). The main target of the Skills Development Project (SDP) is to improve the relevance of TVET in labor market by introducing competency-based training system: a system that proceeds from the development of a qualifications framework, competency standards, curriculum, training delivery, assessment, and quality assurance mechanisms in order to develop a competitive workforce.

The development of competency standards is regarded as the heart of a competency-based training regime. Each standard defines sets of knowledge, skills and attitudes (KSAs) that a Bangladeshi trainee should be able to demonstrate at a recognized level of competence. It provides a common framework of outcomes between the labor and education sectors, as well as among workers, trainers and trainees.

In the process of development, *Industry Skills Council* (ISC) was organized to determine competencies expected of an occupation in Bangladesh. The ISC whose membership come from “top performers” in the industry, performed occupational, competency and unit analyses based on their rich experiences in the field, existing documents, and on the advice of national and international experts. Competency standards of Sri Lanka, Philippines, Australia, Korea, Malaysia, Maldives and other countries were examined.

A series of workshops – development, review and finalization - were conducted to ensure a workable National Competency Standards for the occupation. Further, a validation instrument was developed and administered to other top industry performers to verify and confirm the draft being developed.

It is hoped that this document reflects the real needs of the industry thereby providing a concrete basis for the curriculum development and assessment. In such a way, the development of relevant and competent workforce is not farfetched.

Chowdury Mufad Ahmed
Project Director
Skills Development Project

Prof. Md. Abul Kashem
Chairman, Bangladesh Technical Education Board

Contents

Approval Sheet.....	3
Preface.....	5
Contents.....	6
Acronyms	7
Section 1. The Qualification	8
Section -2: National Competency Standards.....	9
Course Structure for National Skills Certificate in Sewing Machine Operation - Level -1.....	11
Section 3. The Generic Competencies	12
Communicate in the Workplace.....	12
Work in a Team Environment	16
Practice Workplace Cleanliness	19
Practice Occupational Health and Safety (OHS).....	22
Section 4. The Sector Specific Competencies	26
Work in the Ready-Made Garments (RMG) Sector	26
Use Hand Tools and power tools for the RMG Sector.....	30
Section 5 : The Occupation Specific competencies	34
Operate Single Needle Lock Stitch Machine	34
Operate Double Needle Lock Stitch Machine	38
Operate Single Needle Chain Stitch Machine	42
Operate Double Needle Chain Stitch Machine	46
Annexes	50
Annex 1. Competency Map for Sewing Machine Operation in RMG sector.....	50
Annex 2. Bangladesh National Qualifications Framework.....	52
Annex 3. Qualification Level Descriptors.....	53
Annex 4. Key for Coding.....	54
Acknowledgments.....	55

Acronyms

ADB	Asian Development Bank
ANTA	Australian National Training Authority
APEC	Asia Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
BMET	Bureau of Manpower Employment and Training
BTEB	Bangladesh Technical Education Board
CBLM	Competency based learning Materials
CBT	Competency Based Training
CS	Competency Standard
DACUM	Development of a Curriculum
DG	Director General
DTE	Directorate of Technical Education
GOB	Government of Bangladesh
HSC (Voc)	Higher Secondary Certificate (Vocational)
KSA	Knowledge, Skills, Attitude
MoE	Ministry of Education
MoLE	Ministry of Labor and Employment
NTVQ	National Technical Vocational Qualification
NTVQ	National Technical Vocational Qualification
NTVQF	National Technical Vocational Qualification Framework
NTVQF	National Technical Vocational Qualification Framework
OHS	Occupational Health and Safety
PD	Project Director
PIU	Project Implementation Unit
PSC	Project Steering Committee
RMG	Ready Made Garments
RPL	Recognition of Prior Learning
SC	Swiss contact
SDP	Skills Development Project
ISC	Industry Skills Council
SMO	Sewing Machine Operator
SSC (Voc)	Secondary School Certificate (Vocational)
STEP	Skills and Training Enhancement project (WB)
SWC	Sector Working Committee
TESDA	Technical Education and Skills Development Authority
TL	Team Leader
TSC	Technical Sub Committee
TVET	Technical and Vocational Education and Training
WB	World Bank

Section 1. The Qualification

1. Title of Qualification: National Skills Certificate-I in Sewing Machine Operation (RMG Sector)	
1. Qualification code: RMGSMO30112	2. Endorsement date: 08 April 2012
3. Purpose of the qualification	<p>The NSC-I in Sewing Machine Operation Qualification consists of a set Sewing Machine Operation of competencies that a person must achieve in order to work competently in the Informal Sector as a Sewing Machine Operator.</p> <p>In particular, he/she should be able to:</p> <ol style="list-style-type: none"> 1. Operate Single Needle Lock Stitch Machine 2. Operate Double Needle Lock Stitch Machine 3. Operate Single Needle Chain Stitch Machine 4. Operate Double Needle Chain Stitch Machine
5. Regulatory Arrangements	The holder of this qualification should have been assessed by a BTEB certified assessor and found to be competent in the units listed in Section 2.
6. Accreditation requirements	The qualifications shall be offered in compliance with the accreditation requirements set by BTEB.
7. Transition arrangements	In the absence of certified assessors, the BTEB shall appoint trainers who have undergone assessment trainings.
8. Contact for comments	Chairperson Bangladesh Technical Education Board (BTEB) Agargoan, Sher-E-Bangla Nagar

**Section -2: National Competency Standards
For**

National Skills Certificates in Sewing Machine Operation

Generic Competencies

Code	Unit of Competency	Level	No. of Hrs.
GN100112A	Communicate in the Workplace	1	36
GN100212A	Work in a Team Environment	1	18
GN100312A	Practice workplace cleanliness	1	18
GN100412A	Practice Occupational Health and Safety (OHS)	1	30
GN300512A	Lead small team	3	18
GN300612A	Demonstrate work values	3	18
GN300712A	Perform negotiation skills	3	24
Total			162 hours

Sector Specific Competencies

Code	Unit of Competency	Level	No. of Hrs.
RMG100112A	Work in the RMG sector	1	24
RMG100212A	Use hand tools and power tools for the RMG sector	1	30
RMG200312A	Interpret drawing and specifications in manuals for RMG sector	2	30
RMG200412A	Perform measurement and calculation	2	48
Total			132

Occupation Specific Competencies

Code	Unit of Competency	Level	No. of Hrs.
RMGSMO100112A	Operate Single Needle Lock Stitch Machine	1	54
RMGSMO100212A	Operate Double Needle Lock Stitch Machine	1	48
RMGSMO100312A	Operate Single Needle Chain Stitch Machine	1	54
RMGSMO100412A	Operate Double Needle Chain Stitch Machine	1	48
RMGSMO200512A	Operate Four Thread Over Lock Machine	2	39
RMGSMO200612A	Operate Five Thread Over Lock Machine	2	39
RMGSMO200712A	Operate Bottom Covering Chain Stitch Machine	2	36
RMGSMO200812A	Operate Top and Bottom Covering Chain Stitch Machine	2	39
RMGSMO200912A	Operate Kansai Special Machine	2	39
RMGSMO301012A	Operate Button Hole Machine	3	32
RMGSMO301112A	Operate Button Attach Machine	3	32
RMGSMO301212A	Operate Bar Take Machine	3	24
RMGSMO301312A	Operate Zig-Zag Machine	3	32
RMGSMO301412A	Operate Vertical Trimming Machine	3	30
RMGSMO301512A	Operate Feed of the Arm Machine	3	30
RMGSMO301612A	Operate Eyelet Hole Machine	3	30
Total			606 hours
Grand Total			900 hours

Course Structure for National Skills Certificate in Sewing Machine Operation - Level -1

The units of competencies this qualification are summarized as follows:

Generic Competencies

Code	Unit of Competency	Level	No. of Hrs
GN100112A	Communicate in the Workplace	1	36
GN100212A	Work in a Team Environment	1	18
GN100312A	Practice workplace cleanliness	1	18
GN100412A	Practice Occupational Health and Safety (OHS)	1	30
Total			102

Sector Specific Competencies

Code	Unit of Competency	Level	No. of Hrs
RMG100112A	Work in the RMG sector	1	24
RMG100212A	Use hand tools and power tools for the RMG sector	1	30
Total			54

Occupation Specific Competencies

Code	Unit of Competency	Level	No. of Hrs
RMGSMO100112A	Operate Single Needle Lock Stitch Machine	1	54
RMGSMO100212A	Operate Double Needle Lock Stitch Machine	1	48
RMGSMO100312A	Operate Single Needle Chain Stitch Machine	1	54
RMGSMO100412A	Operate Double Needle Chain Stitch Machine	1	48
Total			204
Grand Total			360 hours

Section 3. The Generic Competencies

Unit of Competency:	Communicate in the Workplace
Unit Code:	GN100112A
Unit Descriptor:	This unit covers the knowledge, skills and attitudes (KSAs) required in communicating with others in the workplace environment. It includes the use of receiving verbal instructions, interpreting verbal and written information and Conveying instructions using verbal and written forms of communication.
Nominal Hours:	36 hours

Elements of Competency	Performance Criteria Bold italic words are detailed in the Range of Variables
1. Receive verbal instructions.	1.1 Instructions are accessed and interpreted. 1.2 Questions are asked to clarify understanding or gain more information. 1.3 Information/instruction is recorded.
2. Interpret verbal and written information/instruction	2.1 Written instructions are interpreted in accordance with workplace guidelines . 2.2 Work signage are responded to customer requirement 2.3 Routine written instructions are followed in sequence. 2.4 Feedback is given to workplace supervisor based on workplace guidelines.
3. Convey instructions using verbal and written forms of communication	3.1 Relevant communication methods are used to transmit instructions. 3.2 Appropriate non-verbal communication is used. 3.3 Channels of communication are identified and followed legal requirement and workplace guidelines. 3.4 Communication tools and equipment are operated, and faults are identified and reported. 3.5 Information is conveyed using appropriate forms .
4. Complete written documentation	4.1 All required documentation are completed accurately and on time. 4.2 Workplace data is recorded using approved formats or templates. 4.3 Written information/instruction is passed to appropriate personnel.

5. Participate in work place meetings and discussions	<p>5.1 Meetings are attended regularly and on time following well-disseminated agenda.</p> <p>5.2 Meeting inputs are consistent with the meeting purpose and established protocols.</p> <p>5.3 Opinions are expressed without interruption.</p> <p>5.4 Meeting outputs are processed implemented.</p>
---	---

Range of Variables:

Variable	Range (Include but not limited to):
1. Written instructions	<p>1.1 Supervisor's/Manager's Instructions</p> <p>1.2 Memoranda</p> <p>1.3 Rules and Regulations</p> <p>1.4 Signage</p> <p>1.5 Approved Work Plan</p> <p>1.6 External communications</p>
2. Workplace guidelines	<p>2.1 Labor Policies and Guidelines</p> <p>2.2 Written Instructions</p> <p>2.3 Operations Manual</p> <p>2.4 Organizational Manuals</p> <p>2.5 Quality Assurance Handbook</p>
3. Signage	<p>3.1 On-site direction signs</p> <p>3.2 Common site warnings</p> <p>3.3 Location signs</p> <p>3.4 Traffic signs</p>
4. Communication	<p>4.1 Verbal instructions</p> <p>4.2 Written instructions</p> <p>4.3 Online communication</p>
5. Tools and machinery	<p>5.1 Telephone</p> <p>5.2 Mobile Phone</p> <p>5.3 Fax machines</p> <p>5.4 Two-way radio</p> <p>5.5 Computers</p> <p>5.6 Forms</p> <p>5.7 Memo</p> <p>5.8 Two-way radio</p>
6. Forms	<p>6.1 Memorandum</p> <p>6.2 Requisitioning Form</p> <p>6.3 Personnel Form</p>

	6.4 Safety Report Form
7. Documentation	7.1 Reports (Monthly, Quarterly, Half-Yearly, Annual) 7.2 Plans (Strategic Plan, Operational Plan, Monthly Schedule) 7.3 Monitoring and Evaluation Report 7.4 Minutes of Meetings

Evidence Guide:

1. Critical Aspects of competency	1.1 Demonstrated knowledge of workplace procedures in receiving, interpreting and conveying verbal & written communication. 1.2 Satisfied the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1 Workplace Communication Policies, Standards and Procedures 2.2 Verbal and Non-verbal communication 2.3 Modes of Communication 2.4 Communication Equipment: Types, Uses and Faults 2.5 Channels of Communication
3. Underpinning Skills	3.1 Receiving verbal instructions. 3.2 Interpreting verbal and written information/ instruction 3.3 Conveying instructions using verbal and written forms of communication 3.4 Completing written documentation 3.5 Participating in work place meetings and discussions
4. Underpinning Attitudes	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
5. Resource Implication	5.1 Pens 5.2 Telephone 5.3 Computer 5.4 Writing materials

	5.5 Online communication
6. Methods of Assessment	Competency should be assessed through: 6.1 Oral Questioning 6.2 Observation 6.3 Assignment 6.4 Practical Project 6.5 Demonstration 6.6 Written Exam. 6.7 Portfolio
7. Context of Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.
<p>Accreditation Requirements</p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency:	Work in a Team Environment
Unit Code:	GN100212A
Unit Descriptor:	This unit covers the knowledge, skills and attitudes (KSAs) required in working in a team environment. It includes the following: identify OHS policies and procedures, follow personal safety measures, report hazards and risks, respond to emergencies, and maintain personal well-being.
Nominal Hours:	18 hours

Elements of Competency	Performance Criteria Bold italic words are detailed in the Range of Variables
1. Define team role and scope	1.1 Role and objectives of the team are defined from available <i>sources of information</i> . 1.2 Team structure, responsibilities and reporting relations are identified from team discussions and other external sources.
2. Identify individual role and responsibility	2.1 Individual roles and responsibilities of <i>team members</i> are identified 2.2 Reporting relationships among team members are defined and clarified. 2.3 Reporting relationships external to the team are defined and clarified.
3. Participate in team discussions	3.1 Ideas related to team plans are contributed 3.2 Recommendations for improving team work are put forward.
4. Work as a team member	4.1 Effective forms of communication are used to interact with team members in discussing team activities and objectives based on <i>workplace context</i> . 4.2 Communication channels are followed. 4.3 OHS practices are followed

Range of Variables:

Variable	Range (Include but not limited to):
1. Sources of information	1.1 Standard Operating Procedures 1.2 Job Description 1.3 Operations Manual 1.4 Organizational Structure
2. Team Members	Include but not limited to: 2.1 Coach/mentor 2.2 Supervisor/Manager 2.3 Peers/Colleagues 2.4 Employee representative
3. Workplace context	3.1 National Laws and Statutes 3.2 Standard Operating Procedures 3.3 Workplace Rules and Regulations

Evidence Guide:

1. Critical Aspects of competency	1.1. Demonstrated knowledge in working in a team environment. 1.2. Satisfied the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1. Team Structure, Role and Responsibility 2.2. Individual Members' Roles and Responsibilities 2.3. Communication Flow and Reporting Structures 2.4. Team Planning 2.5. Interpersonal Communication Skills 2.6. Team Meeting Procedures 2.7. OHS Practices
3. Underpinning Skills	3.1. Identifying the role and responsibility of the team 3.2. Identifying roles and responsibilities of individual members 3.3. Participating in team discussions 3.4. Working as a team member
4. Underpinning Attitudes	4.1 Commitment to occupational health and safety 4.2 Environmental concerns 4.3 Eagerness to learn

	<p>4.4 Tidiness and timeliness</p> <p>4.5 Respect for rights of peers and seniors in workplace</p>
5.Resource Implication	<p>The following resources must be made available:</p> <p>5.1 Appropriate workplace</p> <p>5.2 Relevant materials and equipment</p> <p>5.3 Relevant specifications or work instructions</p>
6. Methods of Assessment	<p>Competency should be assessed through:</p> <p>6. 1 Oral Questioning</p> <p>6.2 Observation</p> <p>6.3 Assignment</p> <p>6.4 Demonstration</p> <p>6.5 Written Exam.</p> <p>6.6 Portfolio</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.</p>

Accreditation Requirements

Training providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification.

Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit of Competency:	Practice Workplace Cleanliness
Unit Code:	GN100312A
Unit Descriptor:	This unit covers the knowledge, skills and attitudes (KSAs) required in applying 5S in the workplace. It includes five steps, namely: sort, systematize, sweep, standardize, and sustain activities.
Nominal Hours:	18 hours

Elements of Competency	PERFORMANCE CRITERIA Bold italic words are detailed in the Range of Variables
1. Sort to dispose unnecessary items	1.1. Items in the workplace are identified and differentiated into necessary and unnecessary. 1.2. <i>Unnecessary items</i> are removed and disposed. 1.3. Inventory of necessary items are updated and maintained.
2. Systematize the workplace	2.1. Necessary items are supplied with identification marks and arranged in order. 2.2. The best location to place the necessary items is identified. 2.3. Necessary items are regularly checked in their assigned location.
3. Sweep the workplace	3.1. Workplace is kept neat, clean and tidy before, during and after work hours. 3.2. Tools and equipment are kept clean. 3.3. <i>Minor repairs</i> are done to tools and equipment, when necessary. 3.4. Defective tools and equipment are reported to authority.
4. Standardize activities	4.1. Workplace activities are done based on standard operating procedures. 4.2. Workplace <i>decorum</i> is maintained. 4.3. Accidents are reported to authority immediately. 4.4. Work is performed according to OHS procedures.
5. Sustain housekeeping activities	5.1. <i>5S</i> procedure is implemented. 5.2. Bottlenecks are identified, improvements are recommended, and actions are taken.

Variable	Range (Included but not limited to):
1. Unnecessary Items	1.1. Waste materials 1.2. Papers and other printed materials not related to work activities 1.3. Damaged tools and equipment 1.4. Non-recyclable materials
2. Minor repairs	2.1. Sharpening of tools 2.2. Tightening of nuts, bolts and screws 2.3. Replacing of parts 2.4. Application of oil and lubricants
3. Decorum	3.1. Workplace rules and regulations 3.2. Workplace Code of Ethics
4. 5S	4.1. Sort 4.2. Systematize 4.3. Sweep 4.4. Standardize 4.5. Sustain

Evidence Guide:

1. Critical Aspects of competency	1.1. Evidence of routine practice of 5S in the workplace. 1.2. Satisfying the requirements mentioned in the Performance Criteria and Range of Variables.
2. Underpinning knowledge	2.1. Meaning and Application of 5S 2.2. Purposes of 5S 2.3. Methods of Identifying Weaknesses and Recommending Improvements 2.4. Principles of Efficient Workplace
3. Underpinning Skills	3.1. Communicating 3.2. Planning 3.3. Organizing 3.4. Prioritizing 3.5. Recording

	3.6. Problem Solving
4. Underpinning Attitudes	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
5. Resource Implication	5.1 Work place facility 5.2 Materials, tools and equipment necessary for the activity.
6. Methods of Assessment	Competency should be assessed through: 6. 1 Oral Questioning 6.2 Observation 6.3 Assignment 6.4 Practical Project 6.5 Demonstration 6.6 Written Exam. 6.7 Portfolio
7. Context of Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.

Accreditation Requirements

Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.

Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit of Competency:	Practice Occupational Health and Safety (OHS)
Unit Code:	BC100412A
Unit Descriptor:	This unit covers the knowledge, skills and attitudes (KSAs) required in carrying out occupational and safety practices in the workplace. It includes the following: identify OHS policies and procedures, follow personal safety measures, report hazards and risks, respond to emergencies, and maintain personal well-being.
Nominal Hours:	30 hours

Elements of Competency	Performance Criteria Bold italic words are detailed in the Range of Variables
1. Identify OHS policies and procedures.	1.1. <i>OHS policies</i> and <i>safe operating procedures</i> are accessed, clarified if necessary and followed. 1.2. <i>Safety signs and symbols</i> are identified and followed 1.3. Emergency response, evacuation procedures and other contingency measures are determined. 1.4. Workplace safety conditions are regularly reported to authority.
2. Apply personal health and safety practices	2.1. <i>Personal protective equipment (PPE)</i> and appropriate clothing are worn correctly and stored after use. 2.2. A clear and tidy workplace is maintained. 2.3. OHS equipment are maintained to keep them operational and compliant with OHS regulations
3. Report hazards and risks.	3.1. <i>Hazards</i> and risks are identified, assessed and controlled. 3.2. Terms of tolerable limits are identified. 3.3. Incidents arising from hazards and risks are reported to authority 3.4. Details of incidents are recorded accurately and clearly.
4. Respond to emergencies	4.1. Alarms and warning devices are responded to. 4.2. Workplace <i>emergency procedures</i> are followed. 4.3. Emergency response plans and procedures are implemented.
5. Maintain personal well-being	5.1. OHS policies and procedures are adhered to. 5.2. OHS awareness programs are participated. 5.3. Corrective actions are implemented to correct unsafe condition in the workplace 5.4. <i>“Fit to work” records</i> are updated and maintained.

Range of Variables:

Variable	Range (Included but not limited to):
1. OHS Policies and Procedures	1.1. Bangladesh standards for OHS 1.2. Building Code 1.3. Fire Safety Rules and Regulations 1.4. Code of Practice 1.5. Industry Guidelines
2. Safe Operating Procedures	2.1. Orientation on emergency exits, fire extinguishers, fire escape, etc. 2.2. Emergency procedures 2.3. First Aid procedures 2.4. Tagging procedures 2.5. Use of PPE 2.6. Safety procedures for hazardous substances
3. Safety Signs and symbols	3.1. Direction signs (exit, emergency exit, etc.) 3.2. First aid signs 3.3. Danger Tags 3.4. Hazard signs 3.5. Safety tags 3.6. Warning signs
4. Personal Protective Equipment (PPE)	4.1. Gas Mask 4.2. Gloves 4.3. Safety boots 4.4. Helmet 4.5. Face mask 4.6. Overalls 4.7. Goggles and safety glasses 4.8. Ear plugs 4.9. Sun block 4.10. Chemical/Gas detectors
5. Hazards	5.1. Chemical hazards 5.2. Biological hazards 5.3. Physical Hazards
6. Emergency Procedures	6.1. Fire fighting 6.2. Medical and first aid 6.3. evacuation
7. "Fit to Work" records	7.1. Medical Certificate every year 7.2. Accident reports, if any

Evidence Guide:

1. Critical Aspects of competency	<p>1.1. Demonstrated knowledge in practicing occupational health and safety in the workplace.</p> <p>1.2. Satisfied the requirements mentioned in the Performance Criteria and Range of Variables</p>
2. Underpinning knowledge	<p>2.1. OHS Workplace Policies and Procedures</p> <p>2.2. Work Safety Procedures</p> <p>2.3. Emergency Procedures</p> <p>2.4. Types of Hazards (Biological, Chemical and Physical) and Their Effects</p> <p>2.5. PPE types and uses</p> <p>2.6. Personal Hygiene Practices</p> <p>2.7. OHS Awareness</p>
3. Underpinning Skills	<p>3.1. Identifying OHS policies and procedures</p> <p>3.2. Following personal work safety practices</p> <p>3.3. Reporting hazards and risks</p> <p>3.4. Responding to emergency procedures</p> <p>3.5. Maintaining physical well-being in the workplace</p>
4. Underpinning 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>
5. Resource Implication	<p>The following resources must be provided:</p> <p>5.5. Workplace</p> <p>5.6. Equipment and outfits appropriate in applying safety measures</p> <p>5.7. Tools, materials and documentation required</p> <p>5.8. OHS Policies and Procedures</p>
6. Methods of Assessment	<p>Competency should be assessed through:</p> <p>6. 1 Oral Questioning</p> <p>6.2 Observation</p> <p>6.3 Assignment</p> <p>6.4 Practical Project</p> <p>6.5 Demonstration</p> <p>6.6 Written Exam.</p> <p>6.7 Portfolio</p>
7. Context of	<p>For certification competency should be assessed individually in the actual work place or simulated</p>

Assessment	environment after completion of the module.
<p>Accreditation Requirements</p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Section 4. The Sector Specific Competencies

Unit of Competency:	Work in the Ready-Made Garments (RMG) Sector
Unit Code:	RMG10112A
Unit Descriptor:	This unit covers the knowledge, skills and altitude in working in the RMG sector. It includes the following steps: describing the organizational structure within the ready-made garments sector, identifying processes and procedures, identifying tools, equipment and materials, identifying workplace requirements, organize own workload, and practice OHS.
Nominal Hours:	24hrs

Elements of Competency	Performance Criteria
	Bold italic words are detailed in the Range of Variables
1. Describe the organization structure within the sector	1.1 Scope, nature and major fields of the RMG sector are determined 1.2 Profile of the RMG sector in relation to Bangladesh labor market 1.3 Employment conditions is determined 1.4 Trends and technologies relevant to the sector are explained. 1.5 Relevant policies and guidelines are identified and interpreted. 1.6 Instructions as to procedures in achieving quality are obtained, understood, and clarified.
2. Identify processes and procedures	2.1 Garment production processes are identified, described and explained. 2.2 Work steps are identified. 2.3 Adjustments are interpreted.
3. Identify tools, equipment and materials	3.1 Appropriate manuals are accessed to ensure up-to-date specifications of tools, materials and equipment. 3.2 RMG tools, equipment and materials are identified in case of non-availability. 3.3 Substitutes are selected. 3.4 Adjustments are interpreted.
4. Identify workplace requirements	4.1 Workplace requirements are identified and clarified. 4.2 Roles and responsibilities of all personnel are described. 4.3 Workplace's practices are identified. 4.4 Problem-solving strategies are used to address bottlenecks, inconsistencies and other concerns.
5. Organize own workload	5.1 Own work activities are planned and progress of work is communicated to relevant staff.

	<p>5.2 Work activities are completed.</p> <p>5.3 Difficulties and bottlenecks are identified, and solutions are put forward.</p> <p>5.4 Own work is monitored against workplace standards and areas for improvement identified and acted upon.</p>
6. Practice OHS	<p>6.1 Relevant OHS practices are identified & interpreted.</p> <p>6.2 Relevant OHS practices implemented.</p>

Range of Variables:

Variable	Range (Include but not limited to):
1. Major Fields	<p>1.1 Sewing Machine Operation</p> <p>1.2 Knitting Machine Operation</p> <p>1.3 Dyeing and Printing Machine Operation</p> <p>1.4 Finishing Machine Operation</p> <p>1.5 Bleaching Machine Operation</p> <p>1.6 Lab Former Operation</p> <p>1.7 Comber Operation</p> <p>1.8 Winch Machine Operation</p>
2. Employment conditions	<p>2.1 Code of Practice</p> <p>2.2 Salary/Wage System</p> <p>2.3 Labor Practices</p> <p>2.4 Anti-Discrimination Policy</p> <p>2.5 Gender Issues</p> <p>2.6 Collective Bargaining and Other Practices</p> <p>2.7 Awards</p> <p>2.8 Procedures for Handling Disputes</p> <p>2.9 Innovations in the Sector</p>
3. Instructions	<p>3.1. Specifications and requirements</p> <p>3.2. Standard operating procedures</p> <p>3.3. Manuals of Instruction</p> <p>3.4. Operations Manual</p> <p>3.5. Environmental Guidelines</p> <p>3.6. Gender and Development (GAD) Guidelines</p>
4. Manuals	<p>4.1 Manual of Instruction</p> <p>4.2 Manual of Specification</p> <p>4.3 Operations Manual</p> <p>4.4 Repair Manual</p> <p>4.5 Quality Manual</p>
5. Workplace requirements	<p>5.1 Goals and objectives</p> <p>5.2 Strategic and Operational Plans</p> <p>5.3 Systems and Processes</p>

	5.4 Monitoring and Evaluation 5.5 Reports and Documentation
6. Tools, materials and equipment	Refers to all tools, equipment and materials appropriate to any of the RMG fields
7. Problem-solving strategies	7.1 Asking questions 7.2 Feedback and Feed forward system 7.3 Reference to Standard Operating Procedures 7.4 Accessing Information 7.5 Reviews 7.6 Brainstorming
8. OHS	8.1 Reporting hazards, risks and emergencies 8.2 Arrangement of workplaces 8.3 Standard Operating Procedure 8.4 Use of PPE 8.5 Workplace environment and safety 8.6 Safe storage of tools and equipment

Evidence Guide

1. Critical aspects of competency	1.1 Demonstrated knowledge in working in the Garment industry. 1.2 Satisfying the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1 Scope and Major Divisions of the Garment Industry 2.2 Policies and Guidelines Relevant to the Garment Industry 2.3 Manuals Used in the Garment Industry 2.4 Relevant Terminologies and Acronyms 2.5 Types and Uses of Garment production Tools and Materials 2.6 Workplace Practices 2.7 Occupational Health and Safety Practices 2.8 Recording and reporting practices
3. Underpinning Skills	3.1 Describing organization structure within the garment industry 3.2 Identifying processes and procedures 3.3 Identifying tools, equipment and materials 3.4 Identifying workplace practices 3.5 Organizing own workload 3.6 Practicing OHS
4. Underpinning Attitude	4.1 Commitment to occupational health and safety 4.2 Environmental concerns

	<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>
5. Resource Implications	<p>The following resources must be provided</p> <p>5.1 Adequate workplace</p> <p>5.2 Availability of quality tools and materials required</p> <p>5.3 Information on SOP, OHS, and other policies and guidelines</p> <p>5.4 Relevant specifications and work instructions</p>
6. Method of Assessment	<p>Competency should be assessed through:</p> <p>6. 1 Oral Questioning</p> <p>6.2 Observation</p> <p>6.3 Assignment</p> <p>6.4 Practical Project</p> <p>6.5 Demonstration</p> <p>6.6 Written Exam.</p> <p>6.7 Portfolio</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.</p>
<p>Accreditation Requirements</p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency:	Use Hand Tools and power tools for the RMG Sector
Unit Code:	RMG100212A
Unit Descriptor:	This unit covers the skills, knowledge and attitudes in using hand tools for the RMG sector. It includes the following steps: identify tools, use hand tools, practice OHS, and clean up.
Nominal Hours:	48 hours

Elements of Competency	Performance Criteria
	Bold italic words are detailed in the Range of Variables
1. Identify tools	1.1 Appropriate <i>hand tools</i> and power tools are selected based on job requirements. 1.2 <i>Applications of tools</i> are defined. 1.3 Hand tools and power tools are prepared.
2. Use hand tools	2.1 Appropriate tool is used. 2.3 Proper hand-eye coordination is applied in use of hand tools. 2.4 Unsafe or faulty tools are identified and marked for repair.
3. Use power tools	3.1 Route for power supply established. 3.2 Proper sequence of operations is applied
4. Perform basic preventive maintenance.	4.1 Tools and equipment are cleaned. 4.2 Appropriate lubricants are identified. 4.3 Tools and equipment are lubricated. 4.4 Measuring instruments are checked and Calibrated. 4.5 Defective instruments, equipment and accessories are inspected corrected/replaced. 4.6 Tools are inspected, repaired and replaced after use. 4.7 Work place is cleaned and cleared of debris and unwanted materials as per OHS regulations.

5. Practice OHS	<p>5.1 Waste materials are disposed according to OHS and workplace requirements.</p> <p>5.2 Hazardous materials are identified for separate handling.</p> <p>5.3 PPE are used.</p> <p>5.4 Devices to suppress dust are used to minimize health risk of workers</p> <p>5.5 Safety requirements are being adhered to before, during and after use.</p> <p>5.6 Accidents and emergency cases are reported to authority.</p>
6. Store tools and equipment	<p>6.1 Inventory of tools equipment are conducted, and recorded as per stock register by using forms.</p> <p>6.2 Tools and equipment are cleaned and stored safely in appropriate location.</p>

Range of Variables:

Variable	Range (Include but not limited to):
1. Hand tools	<p>1.1 Measuring Tapes</p> <p>1.2 Nips</p> <p>1.3 Screwdrivers</p> <p>1.4 Steel tape measure</p> <p>1.5 Taps</p> <p>1.6 Triangle</p> <p>1.7 Steel ruler</p> <p>1.8 Scissor</p> <p>1.9 Cutter</p> <p>1.10 Stitch opener</p> <p>1.11 Needle</p> <p>1.12 Blower</p>
2. Applications	<p>2.1 Adjusting</p> <p>2.2 Aligning</p> <p>2.3 Assembling</p> <p>2.4 Clamping</p> <p>2.5 Cleaning</p> <p>2.6 Dismantling</p> <p>2.7 Finishing</p>

	2.8 Lubricating 2.9 Scraping 2.10 Simple Tool Repairs 2.11 Tightening
3. Tools	3.1 Hand Tools 3.2 Power tools
4. Instructions	4.1 Manufacturer's Specifications and Instructions for specific tools/equipment 4.2 Workplace orders and instructions 4.3 Work schedule documentation 4.4 Procedures
5. PPE	5.1 Dust mask 5.2 Aprons 5.3 Face masks
6. Forms	6.1 Maintenance schedule forms 6.2 Requisition slip 6.3 Borrower's Slip 6.4 Inventory Form 6.5 Inspection Forms 6.6 Procedures

Evidence Guide:

1. Critical aspects of competency	1.1 Demonstrated knowledge in using hand tools 1.2 Satisfied the requirements mentioned in the Performance Criteria and Range of Variables
2. Underpinning knowledge	2.1 Types of Tools 2.1.1 Hand Tools 2.1.2 Technical Application of Tools 2.2 Procedures in the Use of Hand Tools 2.3 Policies and procedures for Occupational health and Safety 2.1.1 Use of PPE 2.1.2 Handling of Tools and Equipment 2.1.3 Reporting and Documentation 2.3 Preventive Maintenance 2.3.1 Methods and Techniques 2.3.2 Quality Procedures 2.4 Storage Procedures
3. Underpinning Skills	3.1 Identifying Appropriate Tools

	<p>3.2 Using Hand Tools Correctly</p> <p>3.3 Performing Preventive Maintenance</p> <p>3.4 Practicing OHS</p> <p>3.5 Storing tools and equipment</p>
4. Underpinning 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>
5. Resource Implications	<p>The following resources must be provided</p> <p>5.1 Adequate workplace</p> <p>5.2 All tools, equipment and materials required</p> <p>5.3 Information and documentation</p> <p>5.4 Product specifications</p> <p>5.5 Manual, Codes, Standards and reference materials</p>
6. Method of Assessment	<p>Competency should be assessed through:</p> <p>6. 1 Oral Questioning</p> <p>6.2 Observation</p> <p>6.3 Assignment</p> <p>6.4 Practical Project</p> <p>6.5 Demonstration</p> <p>6.6 Written Exam.</p> <p>6.7 Portfolio</p>
7. Context of Assessment	<p>For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.</p>
<p>Accreditation Requirements</p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Section 5 : The Occupation Specific competencies

Unit of Competency:	Operate Single Needle Lock Stitch Machine
Unit Code:	RMGSMO100112A
Unit Descriptor:	This unit covers the Knowledge, Skills and attitudes required to operate single needle lockstitch sewing machine. It includes assembling, preparing, sewing and transferring the components.
Nominal Hours:	54 hours.

Elements of Competency	Performance Criteria (Bold italic words are detailed in the Range of Variables)
1. Collect tools and materials	1.1 Tools and materials are selected and collected. 1.2 Materials are arranged.
2. Set Machine	2.1 PPE are Collected and used. 2.2 Machine is cleaned . 2.3 Lubricant is checked. 2.4 Motor guard, eye guard, belt guard and needle guard are checked and used as safety guard . 2.5 Machine parts are checked and adjusted. 2.6 Types of needle are selected. 2.7 Tension of the sewing thread is checked and set. 2.8 Machine is checked to ensure the width of the stitch and folder and tools are in place.
3. Perform Sewing	3.1 Components are assembled. 3.2 Components are sewed. 3.3 Quality of trimming is checked. 3.4 Faults are checked and rectified. 3.5 Sewing components are stacked in a sequential order to facilitate next operation.
4. Transfer the sewn components for next operation	4.1 Components are tied in a bundle. 4.2 Components are placed in transport 4.2 Components are transferred for next operation.
5. Close down and clean the machine at the end of work	5.1 Machine is switched off the power. 5.2 Waste materials are shifted to place. 5.2 Machines and place are cleaned

Range of Variable:

Variable	Range (Included but not limited to):
1. Tools	1.1 Trimmers 1.2 Scissors

	1.3 Cutters 1.4 Screw drivers 1.5 Allen key
2. Materials	2.1 Fabrics <ul style="list-style-type: none"> • Cotton • T/C 2.2 Thread <ul style="list-style-type: none"> • Cotton • Polyester
3. Sewing	3.1 Sewing slow run 3.2 Sewing straight Line 3.2 Sewing curve Line 3.3 Sewing different types of angle
4.PPE	4.1 Mask 4.2 Apron 4.3 Scarf
5. Safety Guard	5.1 Motor guard 5.2 Eye guard 5.3 Belt guard 5.4 Needle guard
6. Machine Parts	6.1 Feed dog 6.2 Needles 6.3 Tension post assembly 6.4 Bobbin case and spool 6.5 Thread guide 6.6 Pressure adjusting screw 6.7 Pressure Foot Lever 6.8 Hand Wheel 6.9 Knee Lifter 6.11 Pressure foot
7. Components	7.1 Cuff 7.2 Collar 7.3 Collar Band 7.4 Flap 7.5 Pocket 7.6 Sleeve placket 7.7 Front part (left) 7.8 Front part (right)

	7.9 Back part 7.10 Sleeve 7.11 Rib
8. Faults	8.1 Puckering 8.2 Uneven Stitch 8.3 Floating Stitch 8.4 Wrinkles

Evidence Guide:

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Checked lubricant and adjusted machine parts properly 1.2 Checked the tension of swing thread and Machine parts properly. 1.3 Sewed Component Properly. 1.4 Maintained the quality of trimming and fanning to reduce excess tread. 1.5 Finished seam edge properly.
2. Underpinning Knowledge	2.1 Tools & Materials. 2.2 Parts of Single Needle Lock Stitch Machine 2.3 Components of Garments 2.4 Importance of lubricant & sewing thread tension. 2.5 Safety procedures in operating Single Needle Lock Stitch Machine.
3. Underpinning Skills	3.1 Operating single needle lock stitch machine 3.2 Threading procedure 3.3 Sewing techniques 3.4 Setting Needle and stitches per inch (SPI) 3.5 Controlling Machine speed 3.6 Trimming.
4. Underpinning 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
5. Resource Implications	The following resources should be provided: 5.1 Single Needle Lock Stitch Machine 5.2 Various types of Fabrics 5.3 Threads 5.4 Sewing materials
6. Methods of	Competency should be assessed through:

Assessment	6. 1 Oral Questioning 6.2 Observation 6.3 Assignment 6.4 Practical Project 6.5 Demonstration 6.6 Written Exam. 6.7 Portfolio
7. Context for Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.

Accreditation Requirements

Training providers must be accredited by Bangladesh Technical Education Board (BTEB) , 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 any national qualification.

Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit of Competency:	Operate Double Needle Lock Stitch Machine
Unit Code:	RMGSMO100212A
Unit Descriptor:	This unit covers the Knowledge, Skills and attitudes required to operate double needle lock stitch machine. It includes assembling, preparing, sewing and transferring the components.
Nominal Hours:	48 hours.

Elements of Competency	Performance Criteria (Bold italic words are detailed in the Range of Variables)
1. Collect tools and materials	1.1 Tools and materials are selected and collected. 1.2 Materials are arranged.
2. Set Machine	2.1 PPE are Collected and used. 2.2 Machine is cleaned. 2.3 Lubricant is checked. 2.4 Motor guard, eye guard, belt guard and Needle guard are checked and used as safety guard . 2.5 Machine parts are checked and adjusted 2.6 Types of needle are selected according to materials, sewing manuals. 2.7 Tension of the stitches and blade sharpness are checked and set. 2.8 Machine is checked to ensure the width of the stitch and folder and tools are in place.
3. Perform Sewing	3.1 Components are assembling in accordance to the instruction sheet. 3.2 Components are sewed according to the specific quality. 3.3 Quality is checked. 3.4 Quality is maintained by checking and trimming excess thread and neatening. 3.5 Sewing Components stacked in a sequential order to facilitate next operation.
4. Transfer the Sewn Components for next operation	4.1 Components are tied in a bundle. 4.2 Components are placed in transport 4.2 Components are transferred for next operation.
5. Close down the machine & clean	5.1 Machine is switched off the power. . 5.2 Waste materials are shifted to proper place. 5.2 Machines and place are cleaned. .

Range of Variable:

Variable	Range (Include but not limited to):
1. Tools	1.1 Trimmers 1.2 Scissors 1.3 Cutters 1.4 Screw drivers (Star, Flat) 1.5 Tweezers/Forceps 1.6 Allen key
2. Materials	2.1 Fabric <ul style="list-style-type: none"> • Cotton • T/c 2.2 Thread <ul style="list-style-type: none"> • Cotton • Polyester
3. Sewing	3.1 Sewing slow run 3.2 Sewing straight Line 3.3 Sewing curve Line 3.4 Sewing different types of angle
4.PPE	4.1 Mask 4.2 Apron 4.3 Scarf
5. Safety Guard	5.1 Motor guard 5.2 Eye guard 5.3 Belt guard 5.4 Needle guard
6. Machine Parts	6.1 Feed dog 6.2 Needles 6.3 Tension post assembly 6.4 Bobbin case and spool 6.5 Thread guide 6.6 Pressure adjusting screw 6.7 Pressure Foot Lever 6.8 Hand Wheel 6.9 Knee Lifter 6.10 Pressure foot
7. Components	7.1 Cuff 7.2 Collar 7.3 Collar Band

	<p>7.4 Flap</p> <p>7.5 Pocket</p> <p>7.6 Sleeve placket</p> <p>7.7 Front part (left)</p> <p>7.8 Front part (right)</p> <p>7.9 Back part</p>
8. Faults	<p>7.1 Puckering</p> <p>7.2 Uneven Stitch</p> <p>7.3 Floating Stitch</p> <p>7.4 Wrinkles</p>

Evidence Guide:

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Checked Lubricant and adjusted machine parts properly</p> <p>1.2 Checked the tension of swing thread and Machine parts properly.</p> <p>1.3 Sewed Component Properly.</p> <p>1.4 Maintained the quality of trimming and fanning to reduce excess tread.</p> <p>1.5 Finished seam edge properly.</p>
2. Underpinning Knowledge	<p>2.1 Tools & Materials.</p> <p>2.2 Parts of Double Needle Lock Stitch Machine</p> <p>2.3 Components of Garments</p> <p>2.4 Importance of Lubricant & Swing Thread tension.</p> <p>2.5 Safety Procedures in operating Double Needle Lock Stitch Machine.</p> <p>2.6 Principles of Quality assurance in Garment Manufacture.</p>
3. Underpinning Skills	<p>3.7 Operating Double needle lock stitch machine</p> <p>3.8 Threading procedure</p> <p>3.9 Sewing techniques</p> <p>3.10 Setting Needle and stitches per inch (SPI)</p> <p>3.11 Controlling Machine speed</p> <p>3.12 Trimming & Fanning</p>
4. Underpinning 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>

5. Resource Implications	The following resources should be provided: 5.1 Double Needle Lock Stitch Machine 5.2 Various types of Fabrics 5.3 Threads 5.4 Sewing materials
6. Methods of Assessment	Competency should be assessed through: 6. 1 Oral Questioning 6.2 Observation 6.3 Assignment 6.4 Practical Project 6.5 Demonstration 6.6 Written Exam. 6.7 Portfolio
7. Context for Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.
<p>Accreditation Requirements</p> <p>Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.</p> <p>Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

Unit of Competency:	Operate Single Needle Chain Stitch Machine
Unit Code:	RMGSMO1003412A
Unit Descriptor:	This unit covers the knowledge, skills and attitudes required to operate Single Needle Chain Stitch Machine. It includes assembling, preparing, sewing and transferring the components.
Nominal Hours:	54 hours.

Elements of Competency	Performance Criteria Bold italic words are detailed in the Range of Variables
1. Collect tools and materials	1.1 <i>Tools</i> and <i>materials</i> are selected and collected. 1.2 Materials are arranged.
2. Set Machine	2.1 <i>PPE</i> are Collected and used. . 2.2 Machine is cleaned. . 2.3 Lubricant is checked. 2.4 Motor guard, eye guard, belt guard and Needle guard are checked and used as <i>safety guard</i> . 2.5 <i>Machine parts</i> are checked and adjusted. 2.6 Types of needle are selected according to materials, sewing manuals. . 2.7 Tension of the swing thread and blade sharpness are checked and set. 2.8 Machine is checked to ensure the width of the stitch and folder, gauges and tools are in place.
3. Perform Sewing	3.1 <i>Components</i> are assembling in accordance with the instruction sheet. 3.2 Components are sewed according to the specific quality and quantity. 3.3 Quality and <i>faults</i> are checked. 3.4 Quality is maintained by checking the trimming & fanning to reduce excess thread and neatening. 3.5 Sewing Components stacked in a sequential order to facilitate next operation.
4. Transfer the Sewn Components for next operation	4.1 Components are tied in a bundle. 4.2 Components are placed in transport 4.2 Components are transferred for next operation.
6. Close down the machine at the end of work	5.1 Machine is switched off the power. 5.2 Waste materials are shifted to proper place. 5.2 Machines and place are cleaned.

Range of Variable:

Variable	Range (Included but not limited to):
1. Tools	1.1 Trimmers 1.2 Scissors 1.3 Cutters 1.4 Screw drivers 1.5 Tweezers/Forceps 1.6 Allen key 1.7 Stitch Opener
2. Materials	2.1 Fabric <ul style="list-style-type: none"> • Cotton • T/C 2.2 Thread <ul style="list-style-type: none"> • Cotton • polyester
3. Sewing	3.1 Sewing slow run 3.2 Sewing straight Line 3.3 Sewing curve Line 3.4 Sewing different types of angle
4.PPE	4.1 Mask 4.2 Apron 4.3 Scarf
5. Safety Guard	5.1 Motor guard 5.2 Eye guard 5.3 Belt guard 5.4 Needle guard
6. Machine Parts	6.1 Lopper 6.2 Knife 6.3 Knife guide 6.4 Feed dog 6.5 Needles 6.6 Tension post assembly 6.7 Thread guide 6.8 Pressure adjusting screw 6.9 Knee Lifter 6.10 Hand Wheel 6.11 Pressure foot
7. Components	7.1 Cuff 7.2 Collar 7.3 Collar Band 7.4 Flap 7.5 Pocket 7.6 Sleeve placket 7.7 Front part (left) 7.8 Front part (right) 7.9 Back part
8. Faults	8.1 Broken stitch 8.2 Puckering 8.3 Slipped stitch 8.4 Loose Stitch 8.5 False Stitch

Evidence Guide:

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ol style="list-style-type: none"> 1.1 Checked Lubricant and adjusted machine parts properly 1.2 Checked the tension of swing thread and sharpness of blades. 1.3 Sewed Components properly 1.4 Maintained the quality of trimming & Fanning to reduce excess tread and neatening 1.5 Finished seam edge properly
2. Underpinning Knowledge	<ol style="list-style-type: none"> 2.1 Tools & Materials. 2.2 Parts of Single Needle Chain Stitch Machine 2.3 Components of Garments 2.4 Importance of lubricant, Swing Thread tension & Blade Sharpness. 2.5 Safety Procedures in operating Single Needle Chain Stitch Machine. 2.6 Needle Setting, suitability of setting operation and stitches per inch (SPI)
3. Underpinning Skills	<ol style="list-style-type: none"> 3.1 Operating single needle chain stitch machine 3.2 Threading procedure 3.3 Sewing techniques 3.4 Seam edge Quality 3.5 Setting Needle 3.6 Trimming 3.7 Machine speed controlling 3.8 First aid and fire fighting skills. 3.9 Reading basic instructions in specification sheet 3.10 Using Safety guard and following safety procedure
4. Underpinning Attitude	<ol style="list-style-type: none"> 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
5. Resource Implications	<p>The following resources should be provided:</p> <ol style="list-style-type: none"> 5.1 Single Needle Chain Stitch Machine 5.2 Various types of Fabrics 5.3 Threads 5.4 Sewing materials
6. Methods of Assessment	<p>Competency should be assessed through:</p> <ol style="list-style-type: none"> 6.1 Oral Questioning

	6.2 Observation 6.3 Assignment 6.4 Practical Project 6.5 Demonstration 6.6 Written Exam. 6.7 Portfolio
7. Context for Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.

Accreditation Requirements

Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.

Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Unit of Competency:	Operate Double Needle Chain Stitch Machine
Unit Code:	RMGSMO1004512A
Unit Descriptor:	This unit covers the knowledge, skills and attitudes required to operate double needle chain stitch machine. It includes assembling, preparing, sewing and transferring the components.
Nominal Hours:	48 hours.

Elements of Competency	Performance Criteria Bold italic words are detailed in the Range of Variables
1. Collect tools and materials	1.1 Tools and materials are selected and collected. 1.2 Materials are arranged.
2. Set Machine	2.1 PPE are Collected and used. 2.1 Machine is cleaned. . 2.2. Lubricant is checked. . 2.3 Motor guard, eye guard, belt guard and Needle guard are checked and used as safety guard . 2.4 Machine parts are checked and adjusted. . 2.5 Types of needle are selected according to materials, sewing manuals. 2.6 Tension of the stitches and blade sharpness are checked and set. . 2.7 Machine is checked to ensure the width of the stitch and folder, gauges and tools are in place.
3. Perform Sewing	3.1 Components are assembling in accordance to the instruction sheet. 3.2 Components are sewed according to the specific quality and quantity. 3.3 Quality and faults are checked. 3.4 Quality is maintained by checking and trimming excess thread and neatening. 3.5 Sewing Components stacked in a sequential order to facilitate next operation.
4. Transfer the Components for next operation	4.1 Components are tied in a bundle. 4.2 Components are placed in transport 4.2 Components are transferred for next operation.
6. Close down the machine at the end of work	5.1 Machine is switched off the power. 5.2 Waste materials are shifted to proper place. 5.2 Machines and place are cleaned.

Range of Variable:

Variable	Range (Include but not limited to):
1. Tools	1.1 Trimmers 1.2 Scissors 1.3 Cutters 1.4 Screw drivers (Star, Flat) 1.5 Tweezers/Forceps 1.6 Allen key 1.7 Stitch Opener
2. Materials	2.1 Fabric <ul style="list-style-type: none"> • Cotton • T/C 2.2 Thread <ul style="list-style-type: none"> • Cotton • Polyester
3. Sewing	3.1 Sewing slow run 3.2 Sewing straight Line 3.3 Sewing curve Line 3.4 Sewing different types of angle
4. PPE	4.1 Mask 4.2 Apron 4.3 Scarf
5. Safety Guard	5.1 Motor guard 5.2 Eye guard 5.3 Belt guard 5.4 Needle guard
6. Machine Parts	6.1 Loopier (Upper and Lower) 6.2 Knife (Upper and Lower) 6.3 Knife guide 6.4 Feed dog 6.5 Needles 6.6 Tension post assembly 6.7 Bobbin case and spool 6.8 Thread guide 6.9 Pressure adjusting screw 6.10 Knee Lifter 6.11 Hand Wheel 6.12 Pressure foot
7. Components	7.1 Side seam and inseam 7.2 Pocket hem 7.3 Front and back seam 7.4 Flap 7.5 Attaching 7.6 Decorative stitch
8. Faults	8.1 Broken stitch 8.2 Puckering 8.3 Slipped stitch 8.4 Loose Stitch 8.5 False Stitch

Evidence Guide:

1. Critical aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.6 Checked Lubricant and adjusted machine parts properly 1.7 Checked the tension of swing thread and sharpness of blades. 1.8 Sewed Components properly 1.9 Maintained the quality of trimming & Fanning to reduce excess tread and neatening 1.1 Finished seam edge properly
2. Underpinning Knowledge	<ul style="list-style-type: none"> 2.7 Tools & Materials. 2.8 Parts of Double Needle Chain Stitch Machine 2.9 Components of Garments 2.10 Importance of lubricant, Swing Thread tension & Blade Sharpness. 2.11 Safety Procedures in operating Double Needle Chain Stitch Machine. 2.12 Needle Setting, suitability of setting operation and stitches per inch (SPI)
3. Underpinning Skills	<ul style="list-style-type: none"> 3.11 Operating Double needle chain stitch machine 3.12 Threading procedure 3.13 Sewing techniques 3.14 Seam edge Quality 3.15 Setting Needle 3.16 Trimming & Fanning 3.17 Machine speed controlling 3.18 First aid and fire fighting skills. 3.19 Reading basic instructions in specification sheet 3.13 Using Safety guard and following safety procedure
4. Underpinning Attitude	<ul style="list-style-type: none"> 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
5. Resource Implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 5.1 Double Needle Chain Stitch Machine 5.2 Various types of Fabrics 5.3 Threads 5.4 Sewing materials

6. Methods of Assessment	Competency should be assessed through: 6. 1 Oral Questioning 6.2 Observation 6.3 Assignment 6.4 Practical Project 6.5 Demonstration 6.6 Written Exam. 6.7 Portfolio
7. Context for Assessment	For certification competency should be assessed individually in the actual work place or simulated environment after completion of the module.

Accreditation Requirements

Training providers must be accredited by Bangladesh Technical Education Board(BTEB) , 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 any national qualification.

Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.

Annexes

Annex 1. Competency Map for Sewing Machine Operation in RMG sector

OCCUPATION SPECIFIC COMPETENCIES	Perform Lock Stitch Sewing Machine	Operate Single Needle Lock Stitch Machine 1	Operate Double Needle Lock Stitch Machine 1	Operate Button Hole Machine 3	Operate Bar Take Machine 3	Operate Zig-Zag Machine 3	Operate Embroidery Machine 3	Operate Eyelet Hole Machine 3
	Perform Over Lock Machine	Operate Four Thread Over Lock Machine 2	Operate Five Thread Over Lock Machine 2					
	Perform Chain Stitch Sewing Machine	Operate Single Needle Chain Stitch Machine 1	Operate Double Needle Chain Stitch Machine 1	Operate Bottom Covering Chain Stitch Machine 2	Operate Top and Bottom Covering Chain Stitch Machine 2	Operate Feed of the Arm Machine 3		
	Perform Special Type Sewing Machine	Operate Button Attach Machine 3	Operate Kansai Special Machine 2	Operate Vertical Trimming Machine 3				

SECTOR SPECIFIC COMPETENCIES	Work in the RMG sector	Use hand tools and power tools for the RMG sector					
	1	1					
	Interpret drawing and specifications in manuals for RMG sector	Perform measurement and calculation					
	2	2					
GENERIC COMPETENCIES	Communicate in the workplace	Work in a team environment	Practice workplace cleanliness	Practice occupational health and safety			
	1	1	1	1			
	Lead small team	Demonstrate work values	Perform negotiation skills				
	3	3	3				

Annex 2. Bangladesh National Qualifications Framework

TVQF Level	Education Type			Current Qualification Structure	Job Classification
	Pre-Voc	VE	TE		
TVQF 6			Diploma	4-year Diploma	Supervisor/Middle Manager/Sub-Assistant Engineer
TVQF 5		**NSC-V		NSS Master	Highly-Skilled Worker/Supervisor
TVQF 4		**NSC-IV		NSS 1/HSC (Voc) Year 11/12	Skilled Worker
TVQF 3		**NSC-III		NSS 2/SSC (Voc) Year 10	Semi-Skilled Worker
TVQF 2		**NSC-II		NSS 3/SSC (Voc) Year 9	Basic Skilled Worker
TVQF 1		**NSC-I		NSS Basic/ Basic Trade Course	Basic Worker
Pre-Voc 2	*NPVC-II			None	Pre-Vocational Trainee
Pre-Voc 1	*NPVC-I			None	Pre-Vocational Trainee

*NPVC – National Pre-Vocational Certificate

**NSC – National Skill Certificate

Annex 3. Qualification Level Descriptors

BTVQF Level	Knowledge	Skills	Responsibility	Job Class
6	Comprehensive actual and theoretical knowledge within a specific study area with an awareness of the limits of that knowledge.	Specialised and restricted range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems	Manage a team or teams in workplace activities where there is unpredictable change Identify and design learning programs to develop performance of team members	Supervisor/Middle-Level Manager/Sub Assistant Engineer
5	Very broad knowledge of the underlying, concepts, principles, and processes in a specific study area	Very broad range of cognitive and practical skills required to generate solutions to specific problems in one or more study areas.	Take overall responsibility for completion of tasks in work or study Apply past experiences in solving similar problems	Highly Skilled Worker/ Supervisor (NSC 4)
4	Broad knowledge of the underlying, concepts, principles, and processes in a specific study area	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	Take responsibility, within reason, for completion of tasks in work or study Apply past experiences in solving similar problems	Skilled Worker
3	Moderately broad knowledge in a specific study area.	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	Work or study under supervision with some autonomy	Semi Skilled worker
2	Basic underpinning knowledge in a specific study area.	Basic skills required to carry out simple tasks	Work or study under indirect supervision in a structured context	Medium Skilled Worker
1	Elementary understanding of the underpinning knowledge in a specific study area.	Limited range of skills required to carry out simple tasks	Work or study under direct supervision in a structured context	Basic Skilled Worker
Pre-Voc 2	Limited general knowledge	Very limited range of skills and use of tools required to carry out simple tasks	Work or study under direct supervision in a well-defined, structured context.	Pre- Vocation Trainee (NPVC 2)
Pre-Voc 1	Extremely limited general knowledge	Minimal range of skills required to carry out simple tasks	Simple work or study exercises, under direct supervision in a clear, well defined structured context	Pre- Vocation Trainee (NPVC 1)

Annex 4. Key for Coding

Code	Description
BC	Basic Competencies
Occupational	Sector
RMG	Ready-Made Garments
LEG	Light Engineering
CON	Construction
INF	Informal Sector
Occupation	
SMO	Sewing Machine Operator

Acknowledgments

The Bangladesh Technical Education Board (BTEB) wishes to extend heartfelt thanks and appreciation to the business and industry, academic community and other government agencies who shared their precious time and expertise to the conceptualization, development, validation and finalization of this National Competency Standards.

The Technical Sub Committee

Dr. Khan Rezaul Karim

Director (Voc.)
Directorate of Technical of Technical
Education, Dhaka.

Md. Nuruzzaman Pramanik

Deputy Director (Admin & Finance)
Skills Development Project
Dhaka-1000.

Mrs. Jasmin Sultana

Instructor (Dress Making)
Chadpur Technical School & College Chadpur.

A. S. M Nayeem

Chief Instructor (Dress making)
Netrokona Technical School & College,
Netrokona.

Syed Farid Ahmed

Instructor (Dress Making)
Technical School & College, Meherpur.

Mir Md. Nasimul Haque

Instructor (Dress Making)
Jhalakathi Technical School & College,
Jhalakathi.

Md. Amirul Islam

Senior Instructor (Garments)
Bangladesh Korea TTC
Dhaka.

Md. Ruhul Amin

Senior Instructor (Garments)
Khulna Technical Training Center
Khulna.

Md. Kamruzzaman

Superintendent
Textile Vocational Institute
Sirajgonj.

Syeda Nilufar Begum

Senior Instructor (Garments)
Bangladesh German TTC
Dhaka.

Md. Masudur Rahman

BGMEA
Institute of Fashion & Technology, Uttara,
Dhaka.

The Industry Skills Council (ISC)

Mr. Mohammad Hatem

2nd Vice President
BKMEA, Planners Tower (12th Floor)
Sonargaon Road, Bangla Motor
Dhaka-1000

Mr. Reaz-Bin-Mahmood (Sumon)

Director
BGMEA, M.D.La-Belle Group
Sector-4, Uttara Model Town
Dhaka-1230

Engr. Ahmed Ali

Vice President, BTMA &
Managing Director Padma Bleaching & Dyeing
Ltd.
New DOHS R/A, Dhaka

Eng. Quamrul Ahsan

Director, BKMEA &
Managing Director, Ahsan Composite Ltd.
Concord Tower (5th Floor) 113, KaziNazrul
Islam Avenue
Dhaka

Mr. AlamgirKabir

Director, BKMEA &
Managing Director K.S.A Group
B-24/A, MalibugChowdhury Para
Dhaka

Ms. Umme Saira

Deputy Secretary, Project Coordinator,,Skills
Development Project
BGMEA,23 Panthapath, Dhaka

Mr. Kamal Uddin

Senior Executive & Research & in Charge R & D
BKMEA,Planners Tower (12th Floor) 13/A
Sonargaon Road, Banglamotor
Dhaka

Mr. Zahirul Islam

Deputy General Manager
Hassen Knit Composite Ltd. 190
Motijiheel, SenaKalyanBhaban, 17th floor
Dhaka

Mr. Moshir Rahman Khan

Associate Professor in Garments
Bangladesh Textile University
92, ShaheedTajuddin Ahmed SaraniTejgaon I/A
Dhaka-1208

Mr. Faiz Ahmed

Sr. Lecturer in Knitting
National Institute of Textile Training
Research and Design (NITTRAD),
Administered by BTMA under PPP
Nayarhat, Savar
Dhaka - 1350

M. Mahabub Hossain

Director, BTMA &
Director Unifill Textile Mills Ltd.
Lane # 8, House # B-110 (2nd Floor)
New D.O.H.S Mohakhali, Dhaka

Prof. Dr. AyubNabi Khan

Principal
National Institute of Textile Training
Research and Design(NITTRAD),
Administered by BTMA under PPP Nayarhat
Savar, Dhaka-1350

Md. ShahjahanMian

Director (Planning & Dev.)
Directorate of Technical Education

Eng. AlauddinKhalifa

Curriculum Specialist
Bangladesh Technical Education Board

F-4/B, Agargaon, Sher-e-Bangla Nagar
Dhaka-1207

(BTEB)
Agargaon, Dhaka

Mr. Md. Abdus Sobhan
Industry Coordinator,
Skills Development Project
ShikkhaBhabanm Dhaka-1000

The Review and Editing Team**Md. Manzurul Alam**

Additional Project Director
Skills Development Project
ShikkhaBaban, Dhaka

Engr. Md. Ruhul Amin

Deputy Director (Monitoring & Evaluation)
Skills Development Project
ShikkhaBaban, Dhaka

Md. Nuruzzaman Pramanik

Deputy Director (Admin & Finance)
Skills Development Project
Dhaka-1000.

Ms. Jasmin Sultana

Instructor (Dress Making)
Chandpur Terchnical School and College,
Chandpur

Engr. Md. Abdus Sobhan

SDP Industry Coordinator
Skills Development Project
ShikkhaBaban, Dhaka

Ms. Sayeda Nilufar Begum

Senior Instructor in Garments
Bangladesh German Technical Training Center
Mirpur, Dhaka

Syed Farid Ahmed

Instructor (Dress Making)
Meherpur Terchnical School and College,
Meherpur

Md . Maniul Hasan

Instructor (Dress Making)
Pirojpur Terchnical School and College,
Pirojpur

The SDP Advisory Team

Choudhary Mufad Ahmed
Project Director

Dr. Jeoung Keun Lee
Team Leader

Prof. Md. Abul Bashar
Deputy Team Leader

Dr. Ligaya Valmonte
Curriculum Specialist

Dr. Mohammad Ali
Teachers Training Specialist