STANDARD KEMAHIRAN PEKERJAAN KEBANGSAAN
(NATIONAL OCCUPATIONAL SKILL STANDARD)

OPHTHALMIC TECHNOLOGY
(TEKNOLOGI OFTALMIK)

LEVEL 3
(TAHAP 3)

Jabatan Pembangunan Kemahiran

Kementerian Sumber Manusia, Malaysia

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STANDARD PRACTICE

NATIONAL OCCUPATIONAL SKILLS STANDARD (NOSS) FOR;

OPHTHALMIC TECHNOLOGY
LEVEL 3

1. INTRODUCTION

What is an ophthalmic technology (level 3)?

Ophthalmic technology (level 3) define as an area that refers to the skills required in the edging and mounting of lenses and aiding registered optician/optometrist in the dispensing of spectacles.

This NOSS document shows the structured career path of ophthalmic technology personnel. It provides structured set of activities that enables a person who aspires to achieve competency in this particular occupation, ultimately enhancing him or her on a career in optical equipment & devices industry.

Standard Practice and Standard Content are part of NOSS document. This Job Areas being develop are based on the Occupational Analysis. This document covered the competency standard of ophthalmic technology level 3 that are currently is the priority in optical equipment & devices industry. The panel of experts had concluded that this job area only single tier (level 3) due to most of the task are performed in a variety of contexts, most of which are complex and non-routine. To produce skilled workers in this industry, the needs for structured training are essential.

Pre-requisite

Minimum requirement for those interested to enrol this course are as follows:

- Credit in Mathematic/Physic, and pass in Biology/Chemistry or General Science at SPM level or equivalent
- Medically and physically fit.

These pre-requisite also in line with minimum requirements set by Malaysian Optical Council (MOC) for certificate in optical technology (Malaysian Optical Council, Ministry of Health, 2010, *Guidelines on Approval and Accreditation of Optometry & Opticianry Programmes in Higher Education Institutions*).

Malaysian Optical Council (MOC)

Malaysian Optical Council (MOC) was established on the 1st February 1992 with the purpose of registering optometrists and opticians, and to regulate the practice of optometry in this country through the implementation of all provisions under the Optical Act 1991 and Optical Regulations 1994. The Malaysian Optical Council (MOC), under the Optical Act 1991 is also responsible for recognizing optometry/opticianry schools for the purpose of licensing their graduates for practice in Malaysia. Implicit is the role of setting standards and certifying the achievement of standards of optometry/opticianry programs awarded by all Higher Education Providers (HEPs) within and outside Malaysia.

2. OCCUPATIONAL STRUCTURE

Ophthalmic technology personnel also known as ophthalmic technologist is under the sub-sector of medical equipment & devices. Fig. 1.1 shows the structured career path of ophthalmic technologist.

<table>
<tr><td colspan="4">SEKTOR/SECTOR:
Perubatan & Farmaseutikal
(Medical & Pharmaceuticals)</td></tr>
<tr><td colspan="4">SUB-SEKTOR/SUB-SECTOR:
Kelengkapan & Peralatan Perubatan
(Medical Equipment & Devices)</td></tr>
<tr><td></td><td>Prosthetist</td><td>Orthotist</td><td>Ophthalmic Technology</td></tr>
<tr><td>L5</td><td>MP-041-5
Prostetis
(Prosthetist)
(25-10-10)</td><td>MP-042-5
Ortotik
(Orthotist)
(25-10-10)</td><td rowspan="2">Tiada Tahap
(No Level)</td></tr>
<tr><td>L4</td><td>MP-041-4
Ahli Teknologi Prostetik
(Prosthetics Technologist)
(25-10-10)</td><td>MP-042-4
Ahli Teknologi Ortotik
(Orthotic Technologist)
(25-10-10)</td></tr>
<tr><td>L3</td><td>MP-041-3
Juruteknik Prostetik
(Prosthetics Technician)
(25-10-10)</td><td>MP-042-3
Juruteknik Ortotik
(Orthotic Technician)
(25-10-10)</td><td>Teknologi Oftalmik
(Ophthalmic Technology)</td></tr>
<tr><td>L2</td><td colspan="3" rowspan="2">Tiada Tahap (No Level)</td></tr>
<tr><td>L1</td></tr>
</table>

Fig. 1.1 Occupational Profile Chart for Ophthalmic Technologist

3. DEFINITION OF COMPETENCY LEVEL

The NOSS is developed for various occupational areas. Candidates for certification must be assessed and trained at certain levels to substantiate competencies. Below is a guideline of each NOSS Level as defined by the Department of Skills Development, Ministry of Human Resources, Malaysia.

Malaysia Skills Certificate Level 1: (Operation and Production Level)	Competent in performing a range of varied work activities, most of which are routine and predictable.
Malaysia Skills Certificate Level 2: (Operation and Production Level)	Competent in performing a significant range of varied work activities, performed in a variety of contexts. Some of the activities are non-routine and required individual responsibility and autonomy.
Malaysia Skills Certificate Level 3: (Supervisory Level)	Competent in performing a broad range of varied work activities, performed in a variety of contexts, most of which are complex and non-routine. There is considerable responsibility and autonomy and control or guidance of others is often required.
Malaysia Skills Diploma Level 4: (Executive Level)	Competent in performing a broad range of complex technical or professional work activities performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and allocation of resources is often present.
Malaysia Skills Advanced Diploma Level 5: (Managerial Level)	Competent in applying a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources features strongly, as do personal accountabilities for analysis, diagnosis, planning, execution and evaluation.

4. MALAYSIAN SKILL CERTIFICATION

Candidates after being assessed and verified and fulfilled Malaysian Skill Certification requirements shall be awarded with Sijil Kemahiran Malaysia (SKM) for Level 3.

5. OCCUPATIONAL DEFINITION

Ophthalmic technologist will be able to:

- Execute edging process
- Carry out spectacle adjustment according to patient requirements
- Carry out optical equipment maintenance & calibration
- Manage waste product management
- Carry out replenish of stock/custom order
- Carry out sales activities (elective skill).

6. JOB COMPETENCIES

Ophthalmic technologist is competent in performing:

- Lens edging
- Spectacle adjustment and delivery
- Optical equipment maintenance and calibration
- Waste product Management
- Merchandising & inventory management
- Spectacle and lenses sales activities (elective competency).

7. WORKING CONDITIONS

Ophthalmic technologist normally works indoor in attractive, well-lighted, and well-ventilated surrounding. He/she also may work in optical supplier company, optical lab or optical premises where customers are served one at a time. Some work in large stores where several ophthalmic technologists serve a number of customers at once. The work may be stressful during busy periods. Ophthalmic technologist spends a fair amount of time on their feet. If he/she prepares lenses, he/she needs to take precautions against the hazards associated with glass cutting, chemicals, and machinery. Most of ophthalmic technologist work about 45 hours a week. Those in retail stores may work evenings and weekends. He/she works closely with opticians, optometrists or ophthalmologists.

8. EMPLOYMENT PROSPECTS

Malaysian Market

In all organization related to optical industry, there are excellent career prospect locally due to shortage of hands-on expert.

Due to current environment are not having certified ophthalmic technologist, therefore current optometrists and opticians engaged non certified personnel, upon implementing on this course, we shall be expecting optometrists and opticians will engage certified Ophthalmic Technologist. In addition, changing in technology and methodology of education, need high visual demand and increase visual problem that require dispensing of prescriptive lenses.

With the current market information 4000 to 5000 optical practices in the country, therefore the demand is required.

Other related occupations/industries with respect to employment opportunities are:

- Optician
- Optometrist
- Academician
- Ophthalmic technician
- Optical technologist
- Optical goods sales representative

International Market

For countries that has regulated with optometry/opticianry act, the Ophthalmic Technologist graduates is able to support the optometrists/opticians effectively.

For countries have not been regulated with optometry/opticianry act, it can start with this ophthalmic technology program; graduates can further upgrade their study to diploma in opticianry and degree in optometry respectively in their home country.

With the above the market demand shall be great.

9. TRAINING, INDUSTRIAL/PROFESSIONAL RECOGNITION, OTHER QUALIFICATIONS AND ADVANCEMENT

As for career advancement, ophthalmic technologists learn their craft on the job. They usually begin as helpers and gradually learn new skills as they gain experience. Certification may increase chances of advancement, thus with additional formal training/education, ophthalmic technologist can advance to become an optician through academic pathway.

10. SOURCES OF ADDITIONAL INFORMATION

- **Majlis Optik Malaysia (MOC)**
  Kementerian Kesihatan Malaysia
  Aras 2, Blok E1, Kompleks E
  Pusat Pentadbiran Kerajaan Persekutuan
  62590 Putrajaya.

  Tel: 03-8883 1111
  Fax: 03-8883 1432
  Email: moc@moh.gov.my

- **Malaysia Optical Practitioner Association (MOPA)**
  Block C, 19-5, Megan Avenue II
  No. 12, Jalan Yap Kwan Seng
  50450 Kuala Lumpur.

  Tel: 03-2715 9553 / 56
  Fax: 03-2715 9562

- **Association of Malaysian Optometrists (AMO)**
  Suite 2020,
  PSS Mutiara Damansara
  Lot PT 40036
  Jalan PJU 7/2
  47800 Petaling Jaya
  Selangor.
  Tel: 017-652 0203
  Website: www.amoptom.org
  Email: secretariat@amoptom.org

- **Malaysian Association of Practising Optician (MAPO)**
  Suite 12B-110
  Tingkat 12B
  Wisma Zelan 1
  Jalan Tasik Permaisuri 2
  Bandar Tun Razak
  56000 Cheras
  Kuala Lumpur.

  Tel: 03-9173 1770
  Fax: 03-9173 8771
  Website: www.mapo.org.my
  Email: info@mapo.org.my

11. VALIDATION

11.1 This Standard has been circulated to the respective industry for two weeks for validation and feedback. The list of companies that have received the draft are as follow;

i)

ii)

iii)

11.2 This Standard has been checked by the Standard Technical Evaluation Committee (STEC), DSD and validated by the members of Skills Development Advisory Committee (SDAC) on …….. The SDAC members as listed below have agreed in consensus to this standard;

i)

ii)

12. ENDORSEMENT

The National Skills Development Board (MPKK), Ministry of Human Resources has agreed and endorsed this Standard on ……

13. ACKNOWLEDGEMENT

The Director General of DSD would like to extend his gratitude to the organisations and individuals who have been involved in developing this standard.

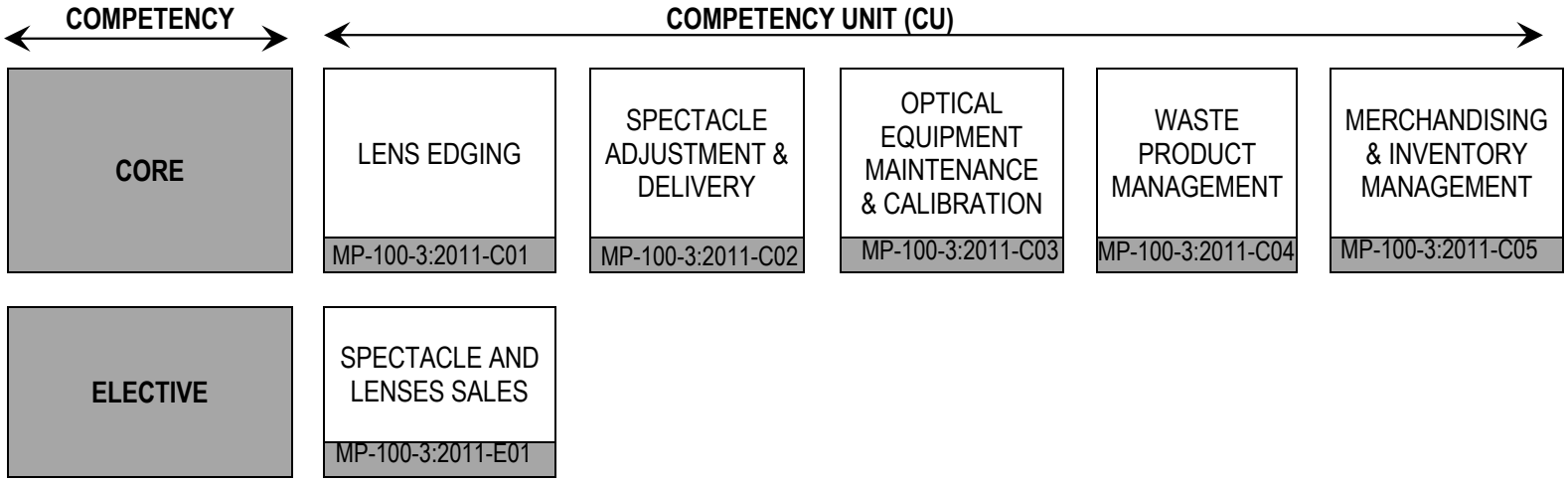
14. COMMITTEE MEMBERS FOR DEVELOPMENT OF STANDARD PRACTICE (SP), JOB PROFILE CHART (JPC), COMPETENCY PROFILE (CP) AND CURRICULUM OF COMPETENCY UNIT (CoCu)

OPHTHALMIC TECHNOLOGY - LEVEL 3

PANEL EXPERTS		
1	En. Ismail A. Shukor	Secretary/Optometrist Majlis Optik Malaysia, Putrajaya
2	Dato' Dr. Chin See Keat	Chief Executive Officer England Optical Group, Petaling Jaya, Selangor
3	En. Chin Siong Chong	Managing Director/Optician Tokyo Megane Optical Sdn. Bhd., Kuala Lumpur
4	En. Azlan Bin Alias	Head of Department/Dispenser Menara Optometry Centre Sdn. Bhd., Kuala Lumpur
5	Pn. Khairunisah Binti Muda	Regional Sales Manager/Optometrist Menara Optometry Centre Sdn. Bhd., Kuala Lumpur
6	En. Amran Bin Haji Ramli	Optometrist Utama Optometrist Group Sdn. Bhd., Shah Alam, Selangor
7	En. Noor Azhar B. Md. Saad	Marketing Manager Utama Optometrist Group Sdn. Bhd., Shah Alam, Selangor
8	Cik Tan Pei Chen	Manager/Optician Ideal Optical, Petaling Jaya, Selangor
9	En. Alvin Tan Kar Meng	Branch Manager/Optician Eye Sight Optical, Kuala Lumpur
10	Cik Grace I. Isnit	Optometry Lecturer Institut Optopreneur, Kuala Lumpur
12	En. Che Hassan B. Salleh	Optometry Lecturer Management & Science University (MSU), Shah Alam, Selangor
13	Cik Chia Kiah Khee (Katherine)	Manager/Optician Easy Eye Care Optical Sdn. Bhd., Petaling Jaya, Selangor
14	Cik Mary Chong	Managing Director Channel Blue Optical Sdn. Bhd., Penang
FACILITATORS		
1	En. Mohd. Aidil Fitri Bin Ab. Razak	Assistant Director JPK, Cyberjaya, Selangor
2	En. Shahrol @ Shukor Bin Salleh	Senior Skills Development Officer JPK, Cyberjaya, Selangor
3	Pn. Zeti Akhtar Bt. Mohamad	Senior Skills Development Officer JPK, Cyberjaya, Selangor

JOB PROFILE CHART (JPC)

SECTOR	MEDICAL & PHARMACEUTICALS		
SUB SECTOR	MEDICAL EQUIPMENT & DEVICES		
JOB DESCRIPTION	OPHTHALMIC TECHNOLOGY		
JOB LEVEL	THREE (3)	**PROGRAM CODE**	



COMPETENCY PROFILE (CP)

Sub Sector	MEDICAL EQUIPMENT & DEVICES
Job Area	OPHTHALMIC TECHNOLOGY
Level	Three (3)

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
1. Lens Edging (Core)	MP-100-3:2011 -C01	Lens edging is focusing on the lens edging activities starting from uncut lens shape need to be adapted to the spectacle frame by grinding the edges of the lens in accordance with prescription & specification requirements, and ability to identify possible problem that may occur before, during and after lens edging activities.	1. Analyze ophthalmic lens prescription 2. Interpret prescription details 3. Perform ophthalmic lens inspection 4. Perform pattern or former making 5. Perform lens centration 6. Perform lens blocking 7. Execute lens edging 8. Perform lens polishing 9. Perform lens tinting 10. Perform lens mounting 11. Perform quality control 12. Prepare quality control report	1. Lens & frame specifications verified 2. Manufacturing defect detected 3. Pre-edging lens parameters verified 4. Optical centre marked 5. Layout marker performed 6. Prism (if any) detected 7. Lens positioned in correct direction 8. Edging size verified 9. Mounting criteria verified 10. Lens chamfered and mounted 11. Post edging lens parameter verified 12. Lens fitting and defect checked 13. Frame alignment checked 14. Spectacle end result documented 15. Spectacle packaged accordance to company's procedure

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
2. Spectacle adjustment & delivery (Core)	MP-100-3:2011 -C02	Spectacle adjustment & delivery is focusing on the competency of handling spectacle adjustment in according to patient comfort, and ability to communicate and educate patient with relevant spectacle care, and deliver spectacle precisely.	1. Identify spectacle & adjustment requirements 2. Carry out spectacle adjustment according to patient requirement 3. Educate patient of specific performance of spectacle 4. Educate patient of spectacle care and visual hygiene 5. Deliver spectacle	1. Spectacle adjusted to the patient's comfort 2. Information well communicated to the patient 3. Spectacle delivered 4. Spectacle delivery form completed
3. Optical equipment maintenance & calibration (Core)	MP-100-3:2011 -C03	Optical equipment maintenance & calibration is focusing on the competency of maintaining & calibrating optical equipment according to optical equipment manuals, and ability to identify and solve equipment problems.	1. Plan optical equipment maintenance & calibration works 2. Carry out optical equipment maintenance & calibration 3. Perform equipment functionality test 4. Complete maintenance checklist	1. Equipment in good condition 2. Equipment functionality checked 3. Equipment calibrated 4. Clean, good and safe working area maintained 5. Maintenance checklist recorded
4. Waste product Management (Core)	MP-100-3:2011 -C04	Waste product disposal is focusing on the competency of management and disposal of optical waste product in accordance with authority's requirement.	1. Plan waste product management 2. Identify licensed waste product collector 3. Manage waste product disposal 4. Record waste product disposal activities	1. Waste product collected accordance with authority's requirement 2. Waste product disposal activities recorded
5. Merchandising & inventory management (Core)	MP-100-3:2011 -C05	Merchandising & inventory management is focusing on the competency of managing stock and inventory, and ability to carry out stock replenishment and ordering with proper management of stock and inventory documents.	1. Plan quantity and variety setting 2. Carry out replenishment of stocks 3. Carry out custom order 4. Produce stock filling documentation 5. Produce daily edging report	1. Ensure setting is correct according to market needs/position 2. Stock of lens counted 3. Custom order received 4. Purchase summary checked 5. Damage lens recorded 6. Inventory report produced

CU Title	CU Code	CU Descriptor	CU Work Activities	Performance Criteria
6. Spectacles and lenses sales (Elective)	MP-100-3:2011 -E01	Spectacles and lenses sales are focusing on the competency of planning & executing sales activities, and ability to recommend/sell suitable frame and recommend various type of lenses to patient.	1. Plan sales activities 2. Execute sales activities 3. Produce sales report	1. Suitable frame and lenses recommended 2. Sales report produced

CURRICULUM of COMPETENCY UNIT (CoCU)

Sub Sector	MEDICAL EQUIPMENT & DEVICES						
Job Area	OPHTHALMIC TECHNOLOGY						
Competency Unit Title	LENS EDGING						
Competency Unit Descriptor	Lens edging is focusing on the lens edging activities starting from uncut lens shape need to be adapted to the spectacle frame by grinding the edges of the lens in accordance with prescription & specification requirements, and ability to identify possible problem that may occur before, during and after lens edging activities.						
Competency Unit ID	MP-100-3:2011-C01	**Level**	3	**Training Duration**	1440 Hours	**Credit Hours**	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
1. Analyze ophthalmic lens prescription	i. Ophthalmic lens prescription details • Spherical power • Cylindrical power • Axis • Visual acuity • Addition power • Working distance • Pupillary distance • Pupil height/ segment height • Prism description • Vertex distance			75 hours	Lecture / Tutorial / E-Learning	• Patient prescription was properly and accurately evaluated • The prescribing optician/optometrist/ ophthalmologist is contacted to verify accuracy and irregularities as appropriate • The limitations defined by the prescription are properly identified

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	ii. Ophthalmic lens details • Refractive index • Base curve • Lens diameter • Lens thickness • Transposition • Lens layout iii. Basic mathematical operations • Four fundamental operations • Simple algebraic operations					• Ophthalmic prescription analyzed and interpreted.
		i. Ability to recognize patient's refractive error based on optician/optometrist/ ophthalmologist prescription ii. Provide the type of lens according to optician/optometrist/ ophthalmologist's prescription iii. Determine Incomplete/incorrect prescriptions and referred to appropriate personnel for action iv. Interpret parameters of atypical prescriptions and analyzed to determine	i. Employs creative thinking, decision making, problem solving, reasoning, and knowing how to learn ii. Always review patient prescription before fabrication iii. Always review the completeness of the prescription iv. Always contact the prescribing optician/optometrist/ ophthalmologist to verify accuracy and	175 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		specific application v. Translating prescriptions into an acceptable eyewear for the patient	irregularities of the prescriptions as appropriate v. Always identify the limitations of the given prescription			
2. Interpret prescription details	i. Commonly encountered ophthalmic disorders • Myopia • Hypermetropia • Presbyopia • Astigmatism ii. Fundamental of human eye structures iii. Facial configuration and abnormalities iv. Format and components of the prescription v. Basic understanding of the nature of lights vi. Ophthalmic terminologies (sphere, cylinder, visual acuity, axis, prism) vii. Frame and lens characteristics			75 hours	Lecture / Tutorial / E-Learning	• Prescription is reviewed for completeness • Ophthalmic measurements are properly interpreted • Commonly encountered ophthalmic conditions are recognized • Optical and Ophthalmic terms in interpreting prescriptions applied • Product applicability to various prescription parameters, with regards to the

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		i. Perform Lens calculations in accordance with specified standards ii. Verify frames based on prescription/order to ensure correct frame is used iii. Select Ophthalmic lenses based on prescription requirements iv. Interpret prescription parameters v. Interpret the mounting criteria following specified standards vi. Interpret Lens order specifications vii. Consider Lens manufacturer/supplier's recommendations	i. Careful in integrating multiple items of data ii. Follow appropriate principles and theories to situation iii. Note common prescription irregularities (e.g. missing signs, opposite signs, incomplete notation)	175 hours	Demonstration, observation and practical	patients visual needs are recognized • Product knowledge in relation to patient's prescription are determine.
3. Perform ophthalmic lens inspection	i. Index of refraction ii. Lens optical defects • The materials(tension, compression or shear) • Decompression • Inclusion • bubbles • Unintended coloration • Crazing • Feathers • Tarnish • Cord/ veins/striae/draw			18 hours	Lecture / Tutorial / E-Learning	• Imperfections of the lens inspected. • Lens power checked accurately. • Relevant instruments and equipment used to carry-out the process. • Instrument and equipment according to its specification and standards used.

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	line iii. Surface defects • Aberration • Scratch or abuse marks due to careless handling • Small surface faults (chatter marks) • Crater in solid bifocals • Drag marks • Greyness • Holes • Orange peel iv. Application of lens meter v. Terms used in verification • Against movement • With movement • Transverse test • Rotation test • Scissors movement • Reflection test vi. Neutralizing lens in minus cylinder form vii. Neutralizing lens in plus cylinder form viii. Power verification and spotting sphero-cylinder form ix. Spotting lenses with prism x. Prism effects and decentration xi. Spotting and verifying multifocal lenses (bi-focal and					• The lens against the prescription verified (power, axis, prescribed prism, add power)

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	tri-focal lenses) xii. Spotting of progressive addition lenses xiii. Reconstruction of identifying marks in progressive lenses					
		i. Check the optical defects of the materials ii. Check surface defects iii. Check the geometrical regularity of the surface as distinct from dimensional precision iv. Inspect the lens type (e.g., single vision, bifocal, trifocal, progressive) v. Inspect the lens material (e.g., CR39, glass, polycarbonate) vi. Inspect the lens as to colour, coating, and filter vii. Visual inspection to determine surface and edge integrity of lenses viii. Verify the lens curvature using a lens clock ix. Determine lens thickness with the use of callipers x. Check for any power variation due to non-uniformity of the index of refraction	i. Meticulous in spotting the physical and optical qualities of the lens ii. Accuracy and precision to be carried out in verifying the lens power iii. Wear white gloves for inspection of the physical properties of the lens to avoid lens damage iv. Before attempting to read the power of the lens, adjust first the eyepieces	42 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		xi. Neutralize the power of the lens xii. Demonstrate the procedure used to determine single vision lenses xiii. Demonstrate the procedure used to determine the power of a bi-focal lens xiv. Demonstrate the procedure used to determine the power of a tri-focal lens xv. Define the relationship between prism and decentration xvi. Define wanted and unwanted prism xvii. Calculate prism amount and determine direction xviii. Check the physical property of the lens xix. Verify lens power				
4. Perform pattern or former making	i. Pattern measurements and terminologies ii. Boxing system (optical centre, geometrical centre, datum line) iii. Frame size and dimensions iv. Measurement of frame difference v. Spectacle major reference points			30 hours	Lecture / Tutorial / E-Learning	• Desired lens size and shape where achieved • Duplication of the lens shape and size are correct • Boxing system are used in the process

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	vi. Pattern making vii. Frame set-up for pattern making					
		i. Centre the frame properly for tracing ii. Check the mechanical centre of the pattern will end-up corresponding to the boxing centre of the lens shape iii. Check the lens opening of the frame to precisely centred at the geometrical centre of its shape iv. Perform frame tracing by rotating the mounted frame on the pattern maker v. Perform pattern cutting from the pattern blank vi. Perform marking on the pattern blank to indeed corresponds to the nasal side of the frame when cut vii. Perform smoothening of the pattern edges to removed roughness	i. Precise in duplication of the lens shape must be observed ii. Always check for a correct pattern in every frame presented for lens fabrication iii. Use extreme caution in measuring a pattern according to the boxing system iv. Must be certain that no rotation has occurred during the process v. Ensure that the pattern holes are perfectly located on its geometrical centre vi. Ensure the pattern is marked the direction of the nasal side vii. Ensure the smoothening does not alter the shape and size	70 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
5. Perform lens centration	i. Purpose of centering ii. Mechanics of lens centration iii. Calculate horizontal decentration using boxing system iv. Terminology of lens centration • Vertex distance • Back vertex distance • Optical centre • Optical centre distance • Visual point • Lens shape • Box lens size • Horizontal centre line • Box centre • Standard optical position • Centration and decentration v. Terminology relating to centration of multifocals / PALs • Segment top • Segment height • Segment top position • Progression height • Distance optical centre • Insetting • Geometrical inset • Fitting cross			30 hours	Lecture / Tutorial / E-Learning	• Amount of required decentration calculated • Layout decentration was accurately carried out • Mechanics of marking system properly demonstrated • Minimum blank size utilized • Location of the Optical Centre specified

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	• Prism reference point • PD gauge vi. Determination of distance between centre vii. Decentration per lenses viii. Decentration from monocular PD ix. Decentration for reading glasses x. Vertical and horizontal centration xi. The lens protractor xii. Marking lens with a lens marking device xiii. Minimum size uncut xiv. Segment placement xv. Measuring the interpupillary distance					
		i. Explain optical effects related to decentration ii. Explain the purpose of decentering the lens iii. Discuss the procedure used to determine where the optical centre of a lens is placed iv. Determine the location of the major reference point v. Determine how to locate the pupillary distance for near and far vision	i. Accuracy and precision must be carried out in the process, as the slightest error will mean inaccuracy in the finished product ii. Prescribed materials should be supplied with accuracy as an ethical responsibility to	70 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		vi. Calculate the amount of decentration required by the patient vii. Lay out lens for edging viii. Check frame size ix. Calculate decentration x. Calculate segment drop xi. Set layout marker to correct decentration xii. Set layout marker to correct segment drop in multifocals xiii. The lens is lined up correctly in the layout marker.	the patient iii. All parameters and directions must be accurately marked to ensure that the lens optics will be positioned properly before the eye iv. From time to time, view a marked lens through the instrument before it is removed to determine if the lens is being accurately marked			
6. Perform lens blocking	i. Types of blocks • Materials (plastic, non flexilbe, hard plastic) • Contour steepness of the curvature (low, regular, high base) ii. Method lens blocking • Pressure blocking • Suction blocking • Metal alloy blocking • Adhesive pad blocking			30 hours	Lecture / Tutorial / E-Learning	• Appropriate edging block selected • Lens blocked properly

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	iii. Type of lens coats • Multi layer anti reflection coats • Mirror coats • Scratch resistance coats iv. Type of lens • Plastic lenses • Glass • Trivex • Polycarbonate lens					
		i. Check the selection of edging block ii. Check the alignment of the lens to ensure axis line is aligned with axis line of blocker iii. Check minimum size uncut for the shape and parameters to be edge iv. Check the type of blocking used.	i. All parameters which were carefully attended to during the centration process must remain as specified ii. Ensure right block selection for specific lens type iii. Keep the surface of the lens for blocking clean iv. Each block should be free from foreign materials v. Adhesive pads should not be exposed to humidity or high	70 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
			temperatures			
7. Execute lens edging	<u>Machine operation (e.g. semi auto, fully auto/patternless):</u> i. Uses and operation of optical tools, equipment and instructional manuals ii. Glazing processes and terms iii. Basic principles in lens edging • Wheel construction • Machine cycling iv. Edging machine setting v. Size compensation for frames using various types of lens materials vi. Bevel selection • Flat • V-bevel • Special v • double v • mini-bevel vii. Edger wheel configuration • Wheel type • Lens recommendation • Mounting circumstances viii. Appropriate lens bevels for basic frame types ix. Chamfering lens after edging			90 hours	Lecture / Tutorial / E-Learning	• Relevant edging equipment is operated in accordance with manufacturer's required operating procedure • Equipment and attachments are maintained in accordance with manufacturer's requirement and safety control • Equipment and attachment are stored in accordance with the manufacturers requirements and safety control • Proficiency in operating edging machine demonstrated • Proficiency in finishing techniques demonstrated • Edge smoothening and bevelling

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	Manual operation (hand): i. Uses of hand edging ii. Edge smoothing iii. Safety or pin bevelling iv. Types of hand edgers • Diamond • Ceramic v. Grit types and purposes vi. Hand edger operational manual vii. Chamfering lens after edging					properly carried-out • Proper steps and procedure throughout the process carried out • Edge finished checked. • Lens well chamfed
		Machine Operation: i. Placement of the pattern (manual operated machine) / trace the frame shape (fully auto machine) to the proper orientation ii. Set the edger to cut out lens that will duplicate the required lens size iii. Clamp the lens firmly with handle locked iv. Choose the lens edge finished (bevel or flat) v. Adjust the pressure of the lens against the wheel vi. Select the correct groove size to match different type of lens and rimlon frame vii. Generate the edging cycle viii. Roughing cycle	i. Observe safety regulations and workplace safety and hazard control practices and procedures ii. Identify the risks in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures iii. Follow safety regulations iv. Always use protective	210 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		ix. Finishing cycle x. Unclamp the lens xi. Check the size accuracy xii. Modification of the size if necessary xiii. Inspect the finished lens xiv. Ability to chamfer properly after edging <u>Manual operation (hand):</u> i. Outline the desired lens shape by cutting and chipping ii. Prepare the wheel for edging iii. Perform the basic procedure in edging iv. Check the quality of the bevel for both angle and apex position v. Check the smoothness of the lens edges vi. Ability to chamfer properly after edging	gear in performing the procedure • Mask • Gloves • Goggles • Hair Net/cap/bonnet • Ear muffs • Apron/Gown/over-all/jump suit • Anti-static suits v. Use the least amount of chucking pressure possible in coated lenses to avoid coating to buckle or crease vi. Maintain a constant angle between the wheel face and the lens vii. Aware of the normal/ abnormal production sound viii. Self-sufficiency / productivity			

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
8. Perform Lens Polishing	i. Type of polishing machine ii. Polishing material (wax) iii. Lens material iv. Method of polishing			6 hours	Lecture / Tutorial / E-Learning	• Lens properly well-polished • Polishing material correctly used • Lens material and coating identified • Shape and size remain unaltered
		i. Identify polishing material (wax) ii. Identify lens material and coating iii. Apply method of polishing iv. Ability to operate various type of polishing machine	i. Use correct polishing material for different type of lens ii. Wear PPE while performing lens polishing iii. Precaution on applying pressure	14 hours	Demonstration, observation and practical	
9. Perform lens tinting	i. Colour mixing theory ii. Tinted lens processes including: • Optical industry standard • Plastic lens tinting including dyes and tint			6 hour	Lecture / Tutorial / E-Learning	• Quality of lens checked • Safe work practices applied • Type of tinting

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	types • Equipment • Preparation • Problems and solutions iii. Lens materials iv. Dye tank temperature and length of time v. Surface Enhancements • Hard Coats • Mirror Coats • Hydrophobic Coats • UV Coats vi. Tinting terminologies vii. Electro-magnetic spectrum					process identified • Lens tinting process applied • Lens tint finish/colour checked • Proper tools and equipment in the procedure used
		i. Check the compatibility of lens surface, material and optical quality of the lens for tinting process ii. Calculate time required for tinting process iii. Identify type of tint iv. Pre-tinting equipment preparation v. Prepare lens for tinting process vi. Ability to perform various type of tint	i. Meticulous in providing the surface treatment and colour match ii. Apply laboratory room practice iii. Caution in handling hazardous solutions	14 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
10. Perform lens mounting	<u>Lens insertion into a plastic frame:</u> i. Frame materials ii. Frame parts and construction (e.g frame fronts, end-piece, bridge, temple) iii. Optical equipment (heater) <u>Lens Insertion into a metal frame:</u> i. Frame materials ii. Frame parts and construction (e.g frame fronts, end-piece, bridge, temple) iii. Frame parts and construction (e.g frame fronts, end-piece, bridge, temple) iv. Frame measurements and markings v. Optical tools (e.g precision screw drivers, ophthalmic pliers) <u>Three (3) pieces mounting:</u> i. Frame mounting design ii. Lens materials iii. Proper choices of lens materials for rimless			60 hours	Lecture / Tutorial / E-Learning	• Mounting of lenses into different types of frame with appropriate techniques • Appropriate tools and techniques for rimless applied • Proper drilling skill applied • Entire mounting assembled • Appropriate tools and techniques for grooving applied • Proper grooving skill applied

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	mounting iv. Different mounting tools and hand tools (bracing plier, bending plier or pad adjusting plier) v. Different Suspension System in securing the lenses into the rim-less mounting vi. Screw and hex nuts vii. Tension system viii. Notched mounting ix. Compression technology x. Fixing pins xi. Cement mounting xii. Standard alignment of the rim-less mounting xiii. Temple spread xiv. Pantoscopic tilt xv. Pad adjustment xvi. Temple bend xvii. Process of hole drilling xviii. Various types of drilling tools and equipment (e.g. auto drill, hand drill, semi-auto drill)					

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	Rim-lon (semi rim) Mounting: i. Groover operational manual ii. Type of Lens iii. Type of Coating					
		Lens insertion into a plastic frame: i. Check the curvature of the lens meniscus compared to the curvature of the front ii. Monitor the temperature of the heating equipment iii. Proper lens insertion method (the temporal edge of the lens into the corresponding outer edge of the frame) iv. Check lens after insertion v. Ensure that the entire circumference of the lens is fitting well on the frame bevel Lens insertion into a metal frame: i. Check lens size before insertion ii. Carry-out proper procedure by putting the lens in a metal frame by comparing the meniscus curves of the top and bottom of the lens corresponding to the upper	i. Always use proper equipment in performing the procedure ii. Precaution in heating plastic frame iii. Use personal protective equipment iv. Ensure the angle of the drilling holes must be drilled perpendicular to the front surface of the lens to secure mounting without stress v. Ensure the size of the holes correctly drill	140 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		and lower frame eye-wire iii. Removed or loosen the eye-wire screw until it is possible to place the lens in the eye-wire iv. Check lens after insertion v. Ensure that the entire circumference of the lens is well fitting on the frame bevel <u>Three (3) pieces mounting:</u> i. Ability to remove the mounting hardware ii. Carry-out centring of the lens onto blocks using the appropriate device for auto drill machine iii. Select drill bit diameter recommended by the frame manufacturer iv. Determine the location and angle to drill the lenses v. Use the manufacturer's drilling template for finding drilling locations vi. Select different drilling speed for different lens materials vii. Perform trimming of the bushing ends viii. Carry-out assembly of the				

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		entire mounting ix. Ability to perform standard alignment x. Ability to operate various drilling tools/equipments <u>Rim-lon (semi rim) mounting:</u> i. Check the lens edge smoothness ii. Adjust the height of the groover blade iii. Perform lens clumping iv. Ensure even wetting before the cycles begin v. Generate the complete cycle vi. Check for a complete groove on the entire circumference of the lens vii. Perform mounting procedure viii. Check cord tension ix. Ability to replace nylon cord				

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
11. Perform quality control	i. Lens parameters • Spherical power • Cylindrical power • Axis • Addition power • Pupillary distance • Pupil height / segment height • Prism ii. Lens materials • Glass • Plastic • Polycarbonate • Trivex • High and medium index iii. Lens coating iv. Lens surface and edge condition v. Lens tinting quality vi. Frame condition vii. Frame measurement systems including boxing and datum viii. Properties of lens (e.g. chips)			6 hours	Lecture / Tutorial / E-Learning	• Correct type and form of lens used in line with patient requirements checked • Lens parameters verified • Frame condition and alignment checked • Overall appearance of spectacles verified • Quality of lens tinting, and edge quality checked
		i. Ability to check lens parameters in accordance with prescription requirements ii. Ability to check frame used in	i. Precision in conducting final checking procedure ii. Engage in quality improvement iii. Always apply quality	14 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		line with prescription requirements iii. Ability to check frame alignments iv. Ability to check if correct type and form of lens used in line with patient requirements v. Ability to check lens surface, tinting and edge quality	standards in the workplace iv. Always follow work instruction and carried out in accordance with the Standard Operating Procedure v. Always identify error and improved on			
12. Prepare quality control report	i. Format of quality control report ii. Procedure to prepare quality control report iii. Report writing skills			6 hours	Lecture / Tutorial / E-Learning	• Quality control report prepared properly • Quality control report analysed • Report submitted on time
		i. Determine format of quality control report ii. Analyse quality control report iii. Follow procedure to prepare quality control report iv. Submit report	i. Meticulous in writing maintenance report ii. Submit report timely	14 hours	Case Study & Group Discussion	

Employability Skills

Core Abilities	**Social Skills**
01.01 Identify and gather information 01.02 Document information, procedures or processes 01.03 Utilize basic IT applications 02.01 Interpret and follow manuals, instructions and SOP's 02.03 Communicate clearly 02.04 Prepare brief reports and checklists using standard forms 02.05 Read/interpret flowcharts and pictorial information 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.04 Seek and act constructively upon feedback about performance 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 01.04 Analyse information 01.05 Utilize the Internet to locate and gather information 01.06 Utilize word processor to process information 04.01 Organize own work activities 04.05 Demonstrate initiative and flexibility 01.07 Utilize database applications to locate and process information 01.08 Utilize spreadsheets applications to locate and process information 01.10 Apply a variety of mathematical techniques 02.10 Prepare reports and instructions 03.16 Identify and assess client / customer needs 05.02 Inspect and monitor work done and / or in progress	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Multitasking and prioritizing 5. Self-discipline 6. Teamwork

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1. Precision screw drivers	1:1
2. Ophthalmic pliers	1:5
3. Needle files	1:5
4. Diamond cutter	1:5
5. Precision nut drivers	1:1
6. PPE lab (face mask, goggles, gloves, etc.)	1:1
7. Lens measure/clock	1:5
8. Precision dial calliper	1:5
9. Centration charts	1:1
10. Frame heater	1:5
11. PD ruler	1:1
12. Manual edger	1:5
13. Automatic edger (with tracer)	1:15
14. Lens blocker/Lens marker	1:5
15. Lens meter	1:5
16. Grooving machine	1:5
17. Tinting/UV unit with complete accessories	1:5
18. Hand polishing machine	1:15
19. Precision drill	1:5
20. Curing oven	1:15
21. UV meter	1:15

References

REFERENCES

1. Brook. C.W. & Borrish I.M (2006), System for Ophthalmic Dispensing 3rd Edition, Butterworth-Heinemann
2. MO Jalie (2003), Ophthalmic Lenses & Dispensing 2nd Edition, Edinburgh: Butterworth-Heinemann, ISBN-0750655267
3. Margaret Dowaliby (2001), Practical Aspects of Ophthalmic Optics 4th Edition, Butterworth-Heinemann, ISBN-0750671890
4. Brooks (2203), Essentials for Ophthalmic Lens Finishing 2nd Edition, Elsevier
5. Brooks and Borish (1996), Systems for Ophthalmic Dispensing 2nd Edition, Butterworth-Heinemann
6. Appler, T., Dennis, R., Muth, E., & White, D. (1999), Management for opticians 2nd Edition, Boston: Butterworth-Heinemann
7. Cassin, B., & Rubin, M.L. (Ed.). (2001), Dictionary of Eye Terminology 4th Edition, Gainesville: Triad Publishing Company

CURRICULUM of COMPETENCY UNIT (CoCU)

Sub Sector	MEDICAL EQUIPMENT & DEVICES						
Job Area	OPHTHALMIC TECHNOLOGY						
Competency Unit Title	SPECTACLE ADJUSTMENT & DELIVERY						
Competency Unit Descriptor	Spectacle adjustment & delivery is focusing on the competency of handling spectacle adjustment in according to patient comfort, and ability to communicate and educate patient with relevant spectacle care, and deliver precisely.						
Competency Unit ID	MP-100-3:2011-C02	**Level**	3	**Training Duration**	240 Hours	**Credit Hours**	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
1. Identify spectacle & adjustment requirements	i. Frame materials (e.g. stainless steel, titanium, optyl, acetate) ii. Frame specification (e.g. box size, lens aperture, nose pad, temple length) iii. Lens material (e.g. glass, CR39, polycarbonate, trivex) iv. Facial measurement and frame fitting (e.g. pantoscopic tilt, dihedral angle of front, bridge angle and nose pad, hinges and angle) v. Type of optical tools (e.g. screwdriver, nose pad adjuster, plier, fair-bank rule)			21 hours	Lecture / Tutorial / E-Learning	• Types of frame and lens materials determined • Types of frame specification determined • Facial measurement and frame fitting determined • Right optical tools selected for specified adjustment • Frame mounting and design determined

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	vi. Frame mounting and design (e.g. full frame, rimlon, rimless) vii. Type of instruments for adjustment (e.g. heater)					• Suitable heater temperature used for specific frame material adjustment
		i. Determine frame materials (e.g. stainless steel, titanium, optyl, acetate) ii. Determine frame specification (e.g. box size, lens aperture, nose pad, temple length) iii. Determine lens material (e.g. glass, CR39, polycarbonate, trivex) iv. Determine facial measurement and frame fitting (e.g. pantoscopic tilt, dihedral angle of front, bridge angle and nose pad, hinges and angle) v. Select type of optical tools (e.g. screwdriver, nose pad adjuster, plier, fair-bank rule) vi. Determine frame mounting and design (e.g. full frame, rimlon, rimless) vii. Select suitable heater temperature for specific frame	i. Meticulous in determine spectacle material ii. Meticulous in using optical tools iii. Good in communication skills iv. Precaution on performing spectacle frame adjustment, be as gentle as possible to avoid frame damage v. Clean & tidy working area	49 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
2. Carry out spectacle adjustment according to patient requirement	i. Patient requirements (e.g. comfortable, maximise visual performance) ii. Facial measurement (e.g. adjustment that matches the frame front to the wearer's facial shape) iii. Frame fitting (e.g. nose pad adjustment, parallelism of the temple) iv. Melting/softening point of plastic material v. Various type of temple bend vi. Shortening of end tip of metal frame			21 hours	Lecture / Tutorial / E-Learning	i. Patient requirements identified ii. Facial measurement determined iii. Frame fitting checked iv. Plastic material properly heated v. Temple checked (temple bend and shortened end tip)
		i. Identify patient requirements (e.g. comfortable, maximise visual performance) ii. Determine facial measurement (e.g. adjustment that matches the frame front to the wearer's facial shape) iii. Check frame fitting (e.g. nose pad adjustment, parallelism of the temple) iv. Identify right heater temperature for melting/softening of plastic material	i. Meticulous in determine facial measurement ii. Meticulous in using optical tools iii. Good in communication skills iv. Precaution on performing spectacle frame adjustment, be as gentle as possible to avoid frame damage v. Clean & tidy working area	49 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		v. Perform various type of temple bend techniques vi. Perform shortening of end tip of metal frame				
3. Educate patient with specific performance of spectacle	i. Basic optic and ophthalmic principles ii. Lens types and characteristic iii. Ophthalmic effect (e.g. distortion, aberration, prismatic effect, magnification effect) iv. Specific ophthalmic lens design and performance (e.g. single vision, multifocal, PALs) v. Various tint and protective lens vi. Type of refractive error vii. Various lens coating			18 hours	Lecture / Tutorial / E-Learning	Competent in explaining:- i. Lens types and characteristic ii. Ophthalmic effect iii. Specific ophthalmic lens design and performance iv. Various tints and protective lens v. Type of refractive error vi. Various type of lens coating and performance
		i. Explain basic optic and ophthalmic principles ii. Explain lens types and characteristic iii. Explain ophthalmic effect (e.g. distortion, aberration, prismatic effect,	i. Confident and good in communication skills ii. New product and latest fashion awareness iii. Latest technology	42 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		magnification effect) iv. Explain specific ophthalmic lens design and performance (e.g. single vision, multifocal, PALs) v. Explain various tint and protective lens vi. Explain type of refractive error vii. Explain various lens coating	awareness which related to optical industry iv. Presentable and good manner v. Knowledge sharing			
4. Educate patient of spectacle care and visual hygiene	i. Procedure of spectacle care ii. Visual hygiene			6 hours	Lecture / Tutorial / E-Learning	Competent in explaining:- i. Procedure of spectacle care ii. Visual hygiene
		i. Explain procedure of spectacle care ii. Explain about visual hygiene	i. Confident and good in communication skills ii. Presentable and good manner iii. Knowledge sharing	14 hours	Demonstration, observation and practical	
5. Deliver spectacle	i. Spectacle packaging (e.g. casing, cloth) ii. Follow up information (e.g. regular check-up) iii. Spectacle delivery procedure			6 hours	Lecture / Tutorial / E-Learning	i. Spectacle packed properly ii. Patient's regular check-up planned iii. Delivery form completed
		i. Use appropriate spectacle packing ii. Plan patient's regular check-up iii. Complete delivery form	i. Tactful and polite during spectacle delivery ii. Confident and good in communication skills	14 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
			iii. Presentable spectacle packaging			

Employability Skills

Core Abilities	Social Skills
01.01 Identify and gather information 01.02 Document information, procedures or processes 01.03 Utilize basic IT applications 02.01 Interpret and follow manuals, instructions and SOP's 02.03 Communicate clearly 02.04 Prepare brief reports and checklists using standard forms 02.05 Read/interpret flowcharts and pictorial information 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.04 Seek and act constructively upon feedback about performance 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 01.04 Analyse information 01.05 Utilize the Internet to locate and gather information 01.06 Utilize word processor to process information 04.01 Organize own work activities 04.05 Demonstrate initiative and flexibility 01.07 Utilize database applications to locate and process information 01.08 Utilize spreadsheets applications to locate and process information 02.10 Prepare reports and instructions 03.16 Identify and assess client / customer needs 05.02 Inspect and monitor work done and / or in progress	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Multitasking and prioritizing 5. Self-discipline 6. Teamwork

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1. Set of spectacles frame	1:5
2. Set of ophthalmic lens	1:5
3. Set of optical tools	1:10
4. Set of measurement gadgets	1:5
5. Set of spectacle casing and cloth	1:10
6. Delivery form	1:1

References

REFERENCES	
1.	Brook. C.W. & Borrish I.M (2006), System for Ophthalmic Dispensing 3rd Edition, Butterworth-Heinemann.
2.	MO Jalie (2003), Ophthalmic Lenses & Dispensing 2nd Edition, Edinburgh: Butterworth-Heinemann, ISBN-0750655267.
3.	Margaret Dowaliby (2001), Practical Aspects of Ophthalmic Optics 4th Edition, Butterworth-Heinemann, ISBN-0750671890.

CURRICULUM of COMPETENCY UNIT (CoCU)

Sub Sector	MEDICAL EQUIPMENT & DEVICES						
Job Area	OPHTHALMIC TECHNOLOGY						
Competency Unit Title	OPHTHALMIC EQUIPMENT MAINTENANCE & CALIBRATION						
Competency Unit Descriptor	Ophthalmic equipment maintenance & calibration is focusing on the competency of maintaining & calibrating ophthalmic equipment according to ophthalmic equipment manuals, and ability to identify and solve equipment problems.						
Competency Unit ID	MP-100-3:2011-C03	**Level**	3	**Training Duration**	480 Hours	**Credit Hours**	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
1. Plan ophthalmic equipment maintenance & calibration works	i. List of ophthalmic equipment ii. User manual iii. List of supplier iv. Maintenance schedule			45 hours	Lecture / Tutorial / E-Learning	• Ophthalmic equipment to be maintained and calibrated identified • Equipment's user manual interpreted • Equipment supplier identified • Maintenance schedule and checklist prepared
		i. Identify ophthalmic equipment to maintain and calibrate ii. Interpret user manual iii. Identify equipment supplier iv. Prepare maintenance schedule and checklist		105 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
2. Carry out ophthalmic equipment maintenance & calibration	i. Ophthalmic equipment instrumentation (e.g. parts and function) ii. Maintenance & calibration procedures iii. Maintenance & calibration tools iv. Ophthalmic equipment spare parts			45 hours	Lecture / Tutorial / E-Learning	• Parts and function of ophthalmic equipment properly identified • Maintenance & calibration procedures followed • Maintenance & calibration tools properly used • Ophthalmic equipment spare parts identified • Ophthalmic equipment maintained and calibrated
		i. Identify parts and function of ophthalmic equipment ii. Follow maintenance & calibration procedures iii. Ability to use maintenance & calibration tools iv. Ability to identify ophthalmic equipment spare parts v. Ability to maintain and calibrate ophthalmic equipment	i. Meticulous in handling maintenance & calibration tools ii. Wear appropriate personal protective equipment (PPE) iii. Proper manage of waste product iv. Ensure workplace always safe and clean	105 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
3. Perform equipment functionality test	i. Type of functionality test ii. Procedures of testing iii. Testing tools iv. Equipment Accuracy			45 hours	Lecture / Tutorial / E-Learning	• Competent in operate varieties of functionality test • Equipment accuracy maintained • Equipment is tested in accordance to specification
		i. Ability to operate varieties of functionality test ii. Ability to follow testing procedures iii. Ability to choose the right testing tools iv. Ability to determine equipment accuracy	i. Meticulous in handling testing equipment and tools ii. Wear appropriate personal protective equipment (PPE) iii. Ensure workplace always safe and clean	105 hours	Demonstration, observation and practical	
4. Complete maintenance checklist	i. Format of maintenance checklist ii. Procedure to record maintenance checklist iii. Report writing skills			9 hours	Lecture / Tutorial / E-Learning	• Maintenance activities recorded • Report submitted
		i. Determine format of maintenance checklist ii. Update maintenance checklist iii. File maintenance checklist iv. Submit report	i. Meticulous in writing maintenance report	21 hours	Demonstration, observation and practical	

Employability Skills

Core Abilities	**Social Skills**
01.01 Identify and gather information 01.02 Document information, procedures or processes 01.03 Utilize basic IT applications 02.01 Interpret and follow manuals, instructions and SOP's 02.03 Communicate clearly 02.04 Prepare brief reports and checklists using standard forms 02.05 Read/interpret flowcharts and pictorial information 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.04 Seek and act constructively upon feedback about performance 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 01.04 Analyse information 01.05 Utilize the Internet to locate and gather information 01.06 Utilize word processor to process information 04.01 Organize own work activities 04.05 Demonstrate initiative and flexibility 01.07 Utilize database applications to locate and process information 01.08 Utilize spreadsheets applications to locate and process information 01.10 Apply a variety of mathematical techniques 02.10 Prepare reports and instructions 03.16 Identify and assess client / customer needs 05.02 Inspect and monitor work done and / or in progress	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Multitasking and prioritizing 5. Self-discipline 6. Teamwork

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1. Equipment user manuals	1:1
2. Set of maintenance tools	1:5
3. Calibration tools	1:1
4. Set of ophthalmic lens	1:5
5. Maintenance checklist form	1:1

References

REFERENCES
1. Zelada, A.J.J. (1987), Dispensing Optician Manual for the New Ophthalmic Technician, Charles C Thomas Publisher Limited

CURRICULUM of COMPETENCY UNIT (CoCU)

Sub Sector	MEDICAL EQUIPMENT & DEVICES						
Job Area	OPHTHALMIC TECHNOLOGY						
Competency Unit Title	WASTE PRODUCT MANAGEMENT						
Competency Unit Descriptor	Waste product disposal is focusing on the competency of manage and dispose optical waste product in accordance with authority's requirement.						
Competency Unit ID	MP-100-3:2011-C04	**Level**	3	**Training Duration**	120 Hours	**Credit Hours**	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
1. Plan waste product disposal	i. Concept about waste product management ii. Source of waste product iii. Waste product hierarchy iv. Waste management and diseases v. Extended waste producer responsibility vi. Waste product acts and policies vii. Polluter pays principle			9 hours	Lecture / Tutorial / E-Learning	• Waste product classification identified • Waste product disposal schedule prepared

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		i. Classify waste product management strategy ii. Identify source of waste product iii. Strategies to promote the integration of all cost associated with waste product iv. Ability to impose accountability over entire life cycle of product v. Ability to prepare waste product disposal schedule	i. Awareness of the waste product on biological and environmental effect ii. Maintain cleanliness & tidiness of workplace	21 hours	Demonstration, observation and practical	
2. Identify licensed waste product collector	i. The technology in waste management. ii. Waste handling and transportation iii. Waste collection systems iv. List of licensed waste product collector			9 hours	Lecture / Tutorial / E-Learning	• waste collector identified • waste product cycle identified • Waste collector schedule identified
		i. Identify waste collector ii. Identify waste product cycle. iii. Determine the waste collector schedule	i. Ensure waste collection according to schedule	21 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
3. Manage waste product disposal	i. Waste collection (the passage of a waste material from the source of production to point of treatment or final disposal) ii. Waste product grading/category iii. Waste product dispose procedure (packaging) iv. Location of waste product disposal for collection v. Contingency plan			9 hours	Lecture / Tutorial / E-Learning	• Waste product categorised • Waste product properly packed • Communicated with waste product collector in schedule
		i. Communicate with waste collector ii. Grade/categorize waste product iii. Ability to handle waste product packaging iv. Ability to handle contingency situation	i. Meticulous in waste product grading ii. Follow safety procedure iii. Handle waste with care iv. Ensure safety working environment	21 hours	Demonstration, observation and practical	
4. Record waste product disposal activities	i. Proximity principle (advocates that waste should be disposed close to the point at which it is generated) ii. Product stewardship (is a concept to ensures that all Those involved in the lifecycle of a product share responsibility for reducing its health and environment			9 hours	Lecture / Tutorial / E-Learning	• Waste product disposal activities recorded

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	impacts, with procedures bearing primary financial responsibility)					
		i. Ability to understand waste product concept ii. Ability to prepare waste product report	i. Responsible to the environment ii. Meticulous in writing waste product report	21 hours	Case Study & Group Discussion	

Employability Skills

Core Abilities	**Social Skills**
01.01 Identify and gather information 01.02 Document information, procedures or processes 01.03 Utilize basic IT applications 02.01 Interpret and follow manuals, instructions and SOP's 02.03 Communicate clearly 02.04 Prepare brief reports and checklists using standard forms 02.05 Read/interpret flowcharts and pictorial information 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.04 Seek and act constructively upon feedback about performance 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 01.04 Analyse information 01.05 Utilize the Internet to locate and gather information 01.06 Utilize word processor to process information 04.01 Organize own work activities 04.05 Demonstrate initiative and flexibility 01.07 Utilize database applications to locate and process information 01.08 Utilize spreadsheets applications to locate and process information 01.10 Apply a variety of mathematical techniques 02.10 Prepare reports and instructions 03.16 Identify and assess client / customer needs 05.02 Inspect and monitor work done and / or in progress	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Multitasking and prioritizing 5. Self-discipline 6. Teamwork

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1. Drain filter units	1:5
2. Plastic bag for waste product	1:1
3. PPE (e.g Hand gloves, Face Mask)	1:1

References

REFERENCES
1. Akta 127 – Akta Kualiti Alam Sekeliling, 1974
2. Peraturan-peraturan Kualiti Alam Sekeliling Buangan Terjadual, 2005

CURRICULUM of COMPETENCY UNIT (CoCU)

Sub Sector	MEDICAL EQUIPMENT & DEVICES						
Job Area	OPHTHALMIC TECHNOLOGY						
Competency Unit Title	MERCHANDISING & INVENTORY MANAGEMENT						
Competency Unit Descriptor	Merchandising & inventory management is focusing on the competency of managing stock and inventory, and ability to carry out stock replenishment and ordering with proper management of stock and inventory documents.						
Competency Unit ID	MP-100-3:2011-C05	**Level**	3	**Training Duration**	120 Hours	**Credit Hours**	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
1. Plan quantity and variety setting	i. Product knowledge of ophthalmic lenses ii. Demographics information and market/position needs iii. Quantity and variety of available stocks iv. Target market/forecast of market needs v. Optician/optometrist/ ophthalmologist prescription form vi. Purchase order form vii. Industry and company terminology and codes viii. Company policies regarding procedures for product in			12 hours	Lecture / Tutorial / E-Learning	• Quantity and variety setting listed out • Supplier and product identified • Demographics information to plan quantity and variety setting applied • Target market and market needs identified • Industry and company terminology and codes interpreted

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
	compliance and out of compliance					• Company policies regarding procedures for product in compliance and out of compliance followed
		i. Ability to identify supplier and product ii. Ability to apply demographics information to plan quantity and variety setting iii. Ability to identify quantity of available stocks iv. Ability to identify target market and market needs ix. Ability to interpret optician/optometrist/ ophthalmologist prescription form v. Ability to interpret purchase order form vi. Ability to interpret industry and company terminology and codes vii. Ability to follow company policies regarding procedures for product in compliance and out of compliance	i. Market awareness ii. Careful in setting quantity and selection of stocks iii. Alert to new products and their supplier	28 hours	Demonstration, observation and practical	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
2. Carry out replenishment of stocks	i. Inventory list of lens and consumable items ii. Quantity of replenishment iii. Frequency, monitor and evaluate lens condition iv. Method and procedure of replenishment v. Inventory procedure vi. Purchasing budget according to company policy			6 hours	Lecture / Tutorial / E-Learning	• Replenishment of stocks listed out • Replenishment of stocks ordered in timely manner in accordance with company procedures
		i. Ability to interpret inventory list of lenses/ consumable items ii. Ability to list out quantity of replenishment iii. Ability to monitor and evaluate lens condition iv. Ability to follow inventory procedure v. Ability to order according to purchasing budget	i. Careful in stock ordering to avoid over stock/budget ii. Awareness of lens condition	14 hours	Demonstration, observation and practical	
3. Carry out custom lens order	i. Types of custom lens order ii. Prescription of custom order (Rx order) iii. Method and procedure of custom order iv. List of suppliers			6 hours	Lecture / Tutorial / E-Learning	• Types of custom lens order identified • Prescription of custom lens order (Rx order) interpreted • Procedure of custom

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		i. Ability to identify types of custom lens order ii. Ability to interpret prescription of custom lens order (Rx order) iii. Ability to follow procedure of lens custom order iv. Ability to identify list of suppliers	i. Meticulous in ordering ii. Ensure order is according to specification iii. Responsible for the order	14 hours	Demonstration, observation and practical	lens order followed • List of suppliers identified
4. Produce stocks report	i. Report writing skills ii. Format of stock report			6 hours	Lecture / Tutorial / E-Learning	• Stock report produced • Format of stock report followed
		i. Ability to prepare stock/inventory report ii. Ability to follow format of stock/inventory report	i. Keep the documents up to date ii. Responsible for the documents	14 hours	Case Study & Group Discussion	
5. Produce daily edging report	i. Report writing skills ii. Format of daily edging report			6 hours	Lecture / Tutorial / E-Learning	• Daily edging report produced • Format of daily edging report followed
		iii. Ability prepare daily edging report iv. Ability to follow format of daily edging report	i. Keep the report up to date ii. Responsible for the report	14 hours	Case Study & Group Discussion	

Employability Skills

Core Abilities	**Social Skills**
01.01 Identify and gather information 01.02 Document information, procedures or processes 01.03 Utilize basic IT applications 02.01 Interpret and follow manuals, instructions and SOP's 02.03 Communicate clearly 02.04 Prepare brief reports and checklists using standard forms 02.05 Read/interpret flowcharts and pictorial information 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.04 Seek and act constructively upon feedback about performance 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 01.04 Analyse information 01.05 Utilize the Internet to locate and gather information 01.06 Utilize word processor to process information 04.01 Organize own work activities 04.05 Demonstrate initiative and flexibility 01.07 Utilize database applications to locate and process information 01.08 Utilize spreadsheets applications to locate and process information 01.10 Apply a variety of mathematical techniques 02.10 Prepare reports and instructions 03.16 Identify and assess client / customer needs 05.02 Inspect and monitor work done and / or in progress	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Multitasking and prioritizing 5. Self-discipline 6. Teamwork

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1. Inventory form	1:1
2. Order form, prescription form	1:1
3. Computer set (with internet access)	1:5
4. Supplier list	1:1

References

REFERENCES
1. Appler et.al (1999), Management for Optician 2nd Edition, Butterworth-Heinemann. ISBN-0-7506-9756-3

CURRICULUM of COMPETENCY UNIT (CoCU)

Sub Sector	MEDICAL EQUIPMENT & DEVICES						
Job Area	OPHTHALMIC TECHNOLOGY						
Competency Unit Title	SPECTACLES & LENSES SALES						
Competency Unit Descriptor	Spectacle & lenses sales are focusing on the competency of planning & executing sales activities, and ability to recommend/sell suitable frame and lenses to patient.						
Competency Unit ID	MP-100-3:2011-C06	**Level**	3	**Training Duration**	120 Hours	**Credit Hours**	

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
1. Plan sales activities	i. Product knowledge (e.g. optical terminology, product characteristic) ii. Patient behaviour iii. Latest trend/fashion/season iv. Merchandising arrangement/display v. Promotion/marketing materials (e.g. brochure, banner, bunting) vi. Promotion activities (e.g. mega sales, year-end sales) vii. Sales of prescription lenses must be supervised by optician/optometrist			12 hours	Lecture / Tutorial / E-Learning	• Product specification is recognised • Latest trend/fashion/season identified correctly. • Ophthalmic product arranged nicely • Promotion/marketing materials prepared

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		i. Ability to understand product knowledge (e.g. optical terminology, product characteristic) ii. Ability to identify patient behaviour iii. Ability to know latest trend/fashion/season iv. Ability to arrange/display ophthalmic product and merchandise material v. Prepare promotion/marketing materials (e.g. brochure, banner, bunting) vi. Plan promotion activities (e.g. mega sales, year-end sales)	i. Fashion/trend/season awareness (e.g. latest lens and frame design) ii. Sensitive to patient behaviour iii. Creative in merchandise and display arrangement iv. Awareness of promotion activities	28 hours	Demonstration, observation and practical	
2. Execute sales activities	i. Ophthalmic optics (e.g. special lens effect, prism lens effect) ii. Selling skills iii. Patient visual requirements iv. Facial and fitting measurement v. Product price category vi. Point of sales material			12 hours	Lecture / Tutorial / E-Learning	• Ophthalmic product recommended • Patient visual requirements identified • Frame suitability to shape of patient's face identified

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
		i. Ability to recommend ophthalmic product ii. Ability to apply selling skills iii. Identify patient visual requirements iv. Ability to identify frame suitability for patient v. Ability to categorise product price vi. Ability to utilise point of sales material provided by the supplier	i. Power of negotiation skills/selling skills ii. Good communication skills to convince patient iii. Self-motivation iv. Self-confident v. Maintain good rapport during negotiation vi. Proper attire/appearance vii. Ensure prescription lenses sales carry out under supervision of optician/optometrist viii. Able to deal and handle sales rejection	28 hours	Demonstration, observation and practical	• Product price categorised according to patient budget • Recommendation regarding spectacle are made in a courteous and professional manner • Appropriate sales techniques for spectacle are employed

Work Activities	Related Knowledge	Applied Skills	Attitude / Safety / Environmental	Training Hours	Delivery Mode	Assessment Criteria
3. Produce sales report	i. Report writing skills ii. Sales report format iii. Sales performance/target analysis iv. Filing system			12 hours	Lecture / Tutorial / E-Learning	• Sales report prepared properly • Sales report format followed • Sales performance/target analysed • Report submitted to superior timely
		i. Ability to prepare sales report ii. Ability to follow sales report format iii. Ability to analyse sales performance/target iv. Ability to submit report to superior	i. Meticulous in writing sales report ii. Punctuality of report submission iii. Honest for the sales performance/target report iv. Aware and responsible of company's target	28 hours	Case Study / Group Discussion	

Employability Skills

Core Abilities	**Social Skills**
01.01 Identify and gather information 01.02 Document information, procedures or processes 01.03 Utilize basic IT applications 02.01 Interpret and follow manuals, instructions and SOP's 02.03 Communicate clearly 02.04 Prepare brief reports and checklists using standard forms 02.05 Read/interpret flowcharts and pictorial information 03.02 Demonstrate integrity and apply ethical practices 03.03 Accept responsibility for own work and work area 03.04 Seek and act constructively upon feedback about performance 03.05 Demonstrate safety skills 06.03 Identify and highlight problems 01.04 Analyse information 01.05 Utilize the Internet to locate and gather information 01.06 Utilize word processor to process information 04.01 Organize own work activities 04.05 Demonstrate initiative and flexibility 01.07 Utilize database applications to locate and process information 01.08 Utilize spreadsheets applications to locate and process information 01.10 Apply a variety of mathematical techniques 02.10 Prepare reports and instructions 03.16 Identify and assess client / customer needs 05.02 Inspect and monitor work done and / or in progress	1. Communication skills 2. Conceptual skills 3. Interpersonal skills 4. Multitasking and prioritizing 5. Self-discipline 6. Teamwork

Tools, Equipment and Materials (TEM)

ITEMS	RATIO (TEM : Trainees)
1. Ophthalmic Product	1:1
2. Promotion/marketing materials	1:1
3. Point of sales material from supplier	1:1
4. Point of sales equipment/tools from supplier	1:5
5. Computer (internet access)	1:5

References

REFERENCES
1. Brook. C.W. & Borrish I.M (2006), System for Ophthalmic Dispensing 3rd Edition, Butterworth-Heinemann.
2. MO Jalie (2003), Ophthalmic Lenses & Dispensing 2nd Edition, Edinburgh: Butterworth-Heinemann, ISBN-0750655267.
3. Margaret Dowaliby (2001), Practical Aspects of Ophthalmic Optics 4th Edition, Butterworth-Heinemann, ISBN-0750671890.

Summary of Training Duration

NO.	COMPETENCY UNIT TITLE	WORK ACTIVITIES	RELATED KNOWLEDGE			APPLIED SKILLS	TOTAL HOURS
			Contact	Non Contact	Total Hours		
1	LENS EDGING	Analyze opthalmic lens prescription	25	50	75	175	325
		interpret prescription details	25	50	75	175	325
		Perform ophthalmic lens inspection	6	12	18	42	78
		Make pattern or former	10	20	30	70	130
		Perform lens centration	10	20	30	70	130
		Perform lens blocking	10	20	30	70	130
		Execute lens edging	30	60	90	210	390
		Perform lens polishing	2	4	6	14	26
		Perfom lens tinting	2	4	6	14	26
		Perform lens mounting	20	40	60	140	260
		Perform quality control	2	4	6	14	26
		Prepare quality control report	2	4	6	14	26
			144	288		1008	1440
			432				
2	SECTACLE ADJUSTMENT DELIVERY	Identify spectacle & adjustment requirements	7	14	21	49	70
		Carry out spectacle adjustment according to patient requirement	7	14	21	49	70
		Educate patient of specific performance of spectacle	6	12	18	42	60
		Educate patient of spectacle care and visual hygiene	2	4	6	14	20
		Deliver spectacle	2	4	6	14	20
			24	48		168	240
			72				
3	OPTICAL EQUIPMENT MAINTENANCE AND CALIBRATION	Plan optical equipment maintenance and calibration works	15	30	45	105	150
		Carry out optical equipment maintenance and calibration	15	30	45	105	150
		Ensure equipment functionality	15	30	45	105	150
		Complete maintenance checklist	3	6	9	21	30
			48	96		336	480
			144				
4	WASTE PRODUCT DISPOSAL	Plan waste product management	3	6	9	21	30
		Identify licensed waste product collector	3	6	9	21	30
		Manage waste product disposal	3	6	9	21	30
		Record waste product disposal activities	3	6	9	21	30
			12	24		84	120
			36				
5	MERCHANDISING AND INVENTORY MANAGEMENT	Plan quantity and variety setting	4	8	12	28	40
		Carry out replenishment of stocks	2	4	6	14	20
		Carry out custom order	2	4	6	14	20
		Produce stock filling documentation	2	4	6	14	20
		Produce daily edging report	2	4	6	14	20
			12	24		84	120
			36				
		TOTAL HOURS (Core Competencies)	240	480		1680	2400
			720				
6	SPECTACLES AND LENSES SALES	Plan sales activities	4	8	12	28	40
		Execute sales activities	4	8	12	28	40
		Produce sales report	4	8	12	28	40
		TOTAL HOURS (Elective Competencies)	12	24		84	120
			36				
		TOTAL HOURS (Core Competencies + Elective Competencies)	756			1764	2520