



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

**Business, Technical, Vocational Education and Training [BTVET] Sub sector
Reform**



**Assessment and Training
Package**

For

ENGRAVER

Qualification Level: 1

**Occupational Cluster: Physics, Technology and
Design**

JANUARY 2022

Developed by:

**Qualifications Standards Department
Directorate of Industrial Training**

Funded by:

Government of Uganda

DIRECTORATE OF INDUSTRIAL TRAINING

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Under BTVET Act, 2008, the functions of the Directorate of Industrial Training are:

- (a) To identify the needs of the labour market for occupational competencies that fall under the UVQF.
- (b) To regulate apprenticeship schemes.
- (c) To foster and promote entrepreneurial values and skills, as an integral part of the UVQF.
- (d) To secure adequate and sustainable financing for the efficient operations of the Directorate.
- (e) To accredit training institutions or companies as assessment centres.
- (f) To determine fees payable under the Act.
- (g) To develop, apply, expand and improve the purposeful application of Uganda vocational qualifications defined in the UVQF.
- (h) To assess and award Uganda Vocational Qualifications.
- (i) To promote on-the-job training in industry for apprenticeship, traineeship and indenture training and for other training such as further skills training and upgrading.
- (j) To prescribe the procedure for the making of training schemes.

Further to the above provisions, there is an established Uganda Vocational Qualifications Framework (UVQF), under part V of the BTVET Act, 2008. It is stated that:

The purpose of the UVQF is to;

- (a) Define occupational standards in the world of work.
- (b) Define assessment standards.
- (c) Award vocational qualifications of learners who meet the set standards of different studies.
- (d) Provide guidelines for modular training.

The UVQF shall follow principles of Competence Based Education and Training (CBET) which include:

- (a) Flexible training or learning modules.
 - (b) Positive assessment and Certification.
 - (c) Assessment of Prior Learning.
 - (d) Recognition of formal and non-formal training.
 - (e) Self-paced or individual learning.
 - (f) Work place learning.
-

For award and recognition of certificates, the BTVET Act, 2008 provides that:

- 1) The Directorate and other examination boards established under the Act shall award certificates and diplomas for Business, Technical or Vocational Education and Training under the UVQF.
- 2) The Certificates and Diplomas to be awarded shall be in the form prescribed by the Minister on the recommendation of the Industrial Training Council.
- 3) The Certificates and Diplomas awarded under the Act shall be recognized in the Uganda education system and by the labor market.

Under the TVET Implementation Standards 2020, the proposed new mandate of the Directorate of Industrial Training shall be restricted to promoting the highest standards in the quality and efficiency of industrial training in the country and ensuring an adequate supply of properly trained manpower at all levels in the industry and the world of work.

The functions shall include:

- (a) Regulating Industrial Training and Trainers.
- (b) Developing Industrial Training Curricula.
- (c) Harmonizing Curricula and Certificates of competence.
- (d) Assessing Industrial Training.
- (e) Development of Occupational Standards and Assessment and Training Packages (ATPs) for Trade Testing for the industry and world of work.
- (f) Awarding certificates in that respect.

At operational level in the Directorate, the Qualification Standards Department performs development tasks related to concepts, procedures and instruments for establishment of the UVQF in close collaboration with both public and private stakeholders in vocational training.

In particular, the Department organizes and coordinates the development of Assessment and Training Packages for use in competence-based vocational training as well as standards-based assessment and certification.

The Directorate has therefore produced this Assessment and Training Package for use in implementing Competence-Based Education and Training mechanisms.

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Word from Permanent Secretary

The Ministry of Education and Sports (MoES) through the Directorate of Industrial Training Conducts Competence Based Assessment.

The foreseen advantages of CBA include improved access, equity and relevance of skills development, reduced unit costs of training, and recognition of Prior Learning (or on-the-job- training), among others.

As the Ministry executes its obligation of ensuring quality in training standards, the public-private partnership is being strengthened to improve occupational competence of the country's workforce without gender bias.

To achieve the set-out targets, the Directorate embarked on the anticipated UVQF design and development piloting its instruments and mechanisms in order to effectively enhance Competence-Based Assessment (CBA) in Uganda.

To date, the Qualifications Standards Department of DIT has produced Assessment and Training Packages (ATP) for various occupations. Each ATP contains 3 parts namely:

- 1.Occupational/job Profile
- 2.Training modules and
- 3.Assessment instruments Banks

The ATP can be used by any training provider and/or those who wish to present themselves for Occupational Assessment and Certification.

Herewith, the Directorate of Industrial Training presents the "Assessment & Training Package (ATP)" for training, assessment and certification of **ENGAVER**.

Finally, I thank all individuals, organizations and development partners who have contributed and/or participated in the review of this noble document.

Ketty Lamaro
Permanent Secretary

Executive Summary

This Assessment and Training Package is a Competence-Based Education and Training (CBET) tool and consists of three major parts:

- 0.1. PART I: The “Occupational Profile” (OP) of an engraver.** This Occupational Profile, which was developed by engravers practicing in the world of work mirrors the duties, and tasks engravers are expected to perform.
- 0.2. PART II: “Training Modules”** in the form of guidelines to train **engravers** both on the job as well as in training centers (or combinations of both venues of learning). The Training Modules herein have been developed basing on the Occupational Profile and hence are directly relevant for employment.
- 0.3. PART III: “Assessment Instruments”** in the form of performance (Practical) and written (theory) test items that can and should be used to assess whether a person complies with the requirements of employment as an **engraver**. These assessment-based instruments were developed by Job practitioners (Engravers) based on the occupational profile and training modules.
- 0.4.** While the Occupational Profile (OP) contained in PART I of this document provides the information on **WHAT a person is expected to do** competently in the world of work, the test items, - including performance criteria- of PART III qualify the **HOW and/or HOW WELL a person must do the job**.
- 0.5.** The modular format of the curriculum (PART II) allows learners to acquire job specific skills and knowledge (i.e., competencies) module by module. A single module can be accomplished within a relatively short duration of time allowing flexibility for learners to move directly into an entry level job, go for further modules or advance to higher levels of training. Modular courses allow more learners to access the training system because training centers as well as companies can accommodate more students in a given period of time.
- 0.6.** In addition to improved access, equity and relevance of BTVET, the UVQF will also enable people who are convinced to have acquired competencies laid down in this ATP through prior training and on-the-job experience to access assessment and certification directly; be it on the basis of a single module, a group of modules or all modules pertaining to the occupation at once. This achievement will facilitate Recognition of Prior Learning (RPL).

0.7. The parts of this Assessment and Training Package were sequentially developed as follows:

- i Part 1: Occupational Profile: ***January 2022***
- ii Part 2: Training Modules: ***January 2022***
- iii Part 3: Assessment Instruments: ***January 2022***

This ATP (or parts of it) may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions.

Patrick Byakatonda
Ag. Director DIT

Acknowledgement

The Qualifications Standards Department of DIT wishes to sincerely acknowledge the valuable contributions to the development of this Assessment and Training Package by the following persons, Institutions and organizations:

- Members of the DIT Industrial Training Council;
- The Director and staff of DIT;
- Ministry of Education and Sports;
- The practitioners from the world of work;
- Art and Design Curriculum Specialists from NCDC
- Examination Specialists from UNEB
- The facilitators involved in guiding the review panel in their activities
- The Government of Uganda for financing the review of this ATP

Abbreviations and Acronyms

A&C	Assessment & Certification
ATP	Assessment & Training Packages
BTVET	Business, Technical and Vocational Education and Training
CBA	Competence Based Assessment
CBET	Competency Based Education and Training
DACUM	Develop a Curriculum
DIT	Directorate of Industrial Training
ITC	Industrial Training Council
GoU	Government of Uganda
LWA	Learning-working Assignment
MC	Modular Curriculum
MoES	Ministry of Education and Sports
OP	Occupational Profile
PEX	Practical Exercise
PTI	Performance (Practical) Test Item
QS	Qualification Standards
RPL	Recognition of Prior Learning
TIB	Test Item Bank
TVET	Technical and Vocational Education and Training
UVQ	Uganda Vocational Qualification
UVQF	Uganda Vocational Qualifications Framework
WTI	Written (Theory) Test Item

Key Definitions

Assessment	Assessment is the means by which evidence is gathered and judged to decide if an individual has met the stipulated assessment standards or not. Testing is a form of formal assessment.
Certification	Certification is a formal procedure to issue a certificate (qualification) to an individual that has demonstrated during formal assessment that he/she is competent to perform the tasks specified in the occupational profile.
Competence	Integration of skills, knowledge, attitudes, attributes and expertise in doing/ performing tasks in the world of work to a set standard.
Competency	(Occupational) competency is understood as the ability to perform tasks common to an occupation to a set standard.
CBET	Competence-based education and training means that programmes: <ol style="list-style-type: none">1. have content directly related to work2. focus is on 'doing something well'3. assessment is based upon industry work standards, and4. curricula are developed in modular form
Duty	A Duty describes a large area of work in performance terms. A duty serves as a title for a cluster of related Tasks (see also: TASK).
Learning-Working Assignment (LWA)	LWA are simulated or real job situations / assignments that are suitable for learning in a training environment (e.g. "small projects"). In a working environment LWA are real work situations/assignments.
Modules	Modules are part(s) of a whole curriculum. Modules can be considered as "self-contained" partial qualifications which are described by learning outcomes or competencies and which can be assessed and certified individually.
Occupational Profile (OP)	An Occupational Profile is an overview of the duties and tasks a job incumbent is expected to perform competently in employment. Occupational Profiles developed by practitioners from the world of work enhance the relevance of training and learning to the requirements of the world of work.

Occupational Profiles define WHAT a person is supposed to do in performance terms. It also contains generic information regarding related knowledge and skills, attitudes/behaviour, tools, materials and equipment required to perform as well as trends/ concerns in the occupation.

Occupational profiles are the reference points for developing modular curricular and assessment standards

Qualification A qualification is a formal reward for demonstrating competence, based on formal assessment against set standards and provided to the individual in the form of a certificate specifying the nature of the competence.

Task Job TASKS represent the smallest unit of job activities with a meaningful outcome. Tasks result in a product, service, or decision. They represent an assignable unit of work and have a definite beginning and ending point. Tasks can be observed and measured. *(see also: Duty)*

1.0 ATP-PART I

Occupational Profile for Engraver

- 1.1 The OCCUPATIONAL PROFILE (OP) for “**Engraver**” below defines the **Duties** and **Tasks** a competent **Engraver** is expected to perform in the world of work (on the job) in Uganda and the East African region today.
- 1.2 Since it reflects the skill requirements of work life, the Occupational Profile is the reference document for the subsequent development of training modules and assessment instruments (test items) which are directly relevant to employment in Ugandan and the East African businesses and industries.
- 1.3 To ensure that the Occupational Profile is relevant for employment in Uganda and East Africa, the DIT used the DACUM method of “occupational/job profiling.

This approach involves the brainstorming of a panel of 8 to 12 competent job practitioners guided by trained and experienced facilitators. During a two-day workshop the panellists define the duties and tasks performed in employment, as well as the prerequisite skills, knowledge, attitudes, tools and equipment, and the future trends and concerns in the occupation/job.

- 1.4 The panellists, facilitators and coordinators who participated in developing this Occupational Profile for **Engraver** are listed on the following page.

¹ The DACUM-method was used. DACUM is an acronym for ‘Develop A Curriculum’

Expert Panel

Busingye Peace

MoES

Kavuma Abubaker

NCDC

Banfundizeki Robert Deus

UNEB

Ahimbisibwe Deborah

Ntare School

Kiyaga Anthony

Kings College Buddo

Ayen Peter

Dr. Obote College Boroboro

Kasuja Henry

St. Henrys College Kitovu

Makanga Jacob

St. Peters SS Naalya

Ssegamwenge Charles

City Engravers Ltd

Mugambe Ezra

Kampala Engravers Ltd

Kimbugwe Daniel

Engraving Systems Ltd

Facilitators

Kyarizi Lovance

Directorate of Industrial

Training

Asimwe Sarah

Directorate of Industrial

Training

Co-ordinator

Mukyala Elizabeth Ruth

Directorate of Industrial

Training

Funded by

Government of Uganda



THE REPUBLIC OF UGANDA
Ministry of Education and Sports

**Business, Technical, Vocational Education and
Training (BTVET) Sub sector Reform**

Occupational Profile

For a

“ENGRAVER”

**Reviewed by: Directorate of Industrial Training
(Qualifications Standards)**

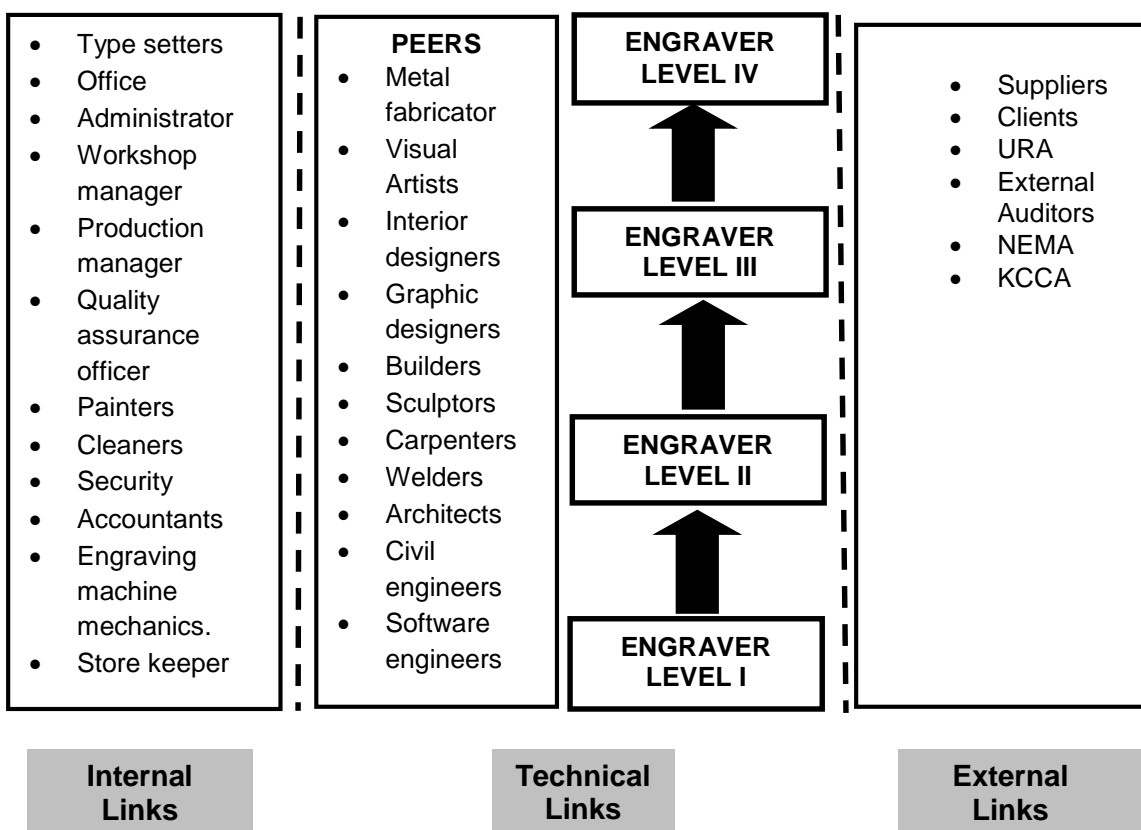
Dates of workshop: 17th – 21st January 2022

NOMENCLATURE FOR THE OCCUPATION OF ENGRAVER

Definition of an engraver

A skilled person who can create permanent reliefs into hard surfaces to achieve a given design.

JOB ORGANISATION CHART FOR AN ENGAVER.



Descriptions for the levels in the occupation of a ‘Engraver’

UVQ Level I Engraver; is a skilled person who can create reliefs on flat surfaces using hand tools.

UVQ Level II Engraver; is a skilled person who can create reliefs on flat surfaces using electrical machines.

UVQ Level III Engraver; is a skilled person who can create intricate designs on flat surfaces using computerised equipment

UVQ LEVEL 1V Engraver; is a skilled person who can make intricate designs on irregular shapes using computerised equipment

Duties and Tasks

A. PLAN WORK.	A1. Make business plan.	A2. Determine workshop location	A3. Design workshop set up
	A4. Carryout feasibility study	A5. Make marketing strategy	A6. Determine nature of products
	A7. Prepare budget	A8. Determine labour requirements	A9. Determine source of funds

B. MANAGE TOOLS AND EQUIPMENT	B1. Procure tools and equipment	B2. Transport tools and equipment	B3. Store tools and equipment
	B4. Install tools and equipment	B5. Test tools and equipment	B6. Prepare inventory
	B7. Train workers on tools and equipment usage	B8. Prepare maintenance schedule	B9. Clean tools and equipment
	B10. Repair tools and equipment	B11. Service tools and equipment	B12. Replace worn out parts
	B13. Configure tools and equipment	B14. Prepare maintenance records	B15. Upgrade technology

C. PRODUCE ENGRAVED WORKS	C1. Generate design ideas.	C2. Analyse design blueprints and patterns	C3. Prepare working patterns
	C4. Prepare work lay out	C5. Select materials	C6. Select tools and equipment
	C7. Size materials	C8. Position materials	C9. Set machine

	C10. Incise materials	C11. Perform etching	C12. Finish work
	C13. Cost works	C14. Keep production records	C15. Contract work

D. PERFORM ADMINISTRATIVE TASKS	D1. Identify business name	D2. Register business	D3. Acquire licence
	D4. Recruit workers	D5. Mentor staff	D6. Schedule work
	D7. Assign work	D8. Supervise works	D9. Appraise workers
	D10. Remunerate workers	D11. Keep human resource records	D12. Motivate workers
	D13. Pay utility bills	D14. Pay taxes	D15. Keep financial records
	D16. Prepare technical reports	D17. Manage conflicts	D18. Organise meetings
	D19. Perform banking transactions		

E. PERFORM OCCUPATIONAL HEALTH, SAFETY AND ENVIRONMENTAL PROTECTION PRACTICES	E1. Install fire extinguishers	E2. Manage wastes	E3. Prepare first aid kits
	E4. Wear safety gears	E5. Display safety information	E6. Monitor compliance to safety regulations
	E7. Administer first aid	E8. Perform fire fighting	E9. Maintain hygiene
	E10. Assess health risks at work	E11. Sensitize workers on safety and health issues	

F. MARKET PRODUCTS	F1. Brand work	F2. Advertise business	F3. Package products
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	F4. Price products	F5. Exhibit products	F6. Offer after sale service
	F7. Transport products		

ADDITIONAL INFORMATION

<p>Generic knowledge & skills</p> <ol style="list-style-type: none"> 1. Material properties 2. Surface interpretation 3. Numeracy 4. Measurements 5. Computer software programs 6. Marketing 7. Drawing 8. Designing 9. Business management 10. Communication skills 11. Customer care service 12. Record keeping 13. Concept interpretation 14. Tools and equipment usage 15. Waste management 	<ol style="list-style-type: none"> 16. Service delivery 17. Bench marking 18. Resource mobilization 19. Entrepreneurship 20. Health, safety and environmental awareness 21. Public relations 22. Mechanical knowledge 23. Problem solving 24. Financial literacy 25. Innovative 26. Creativity 27. Flexibility 28. Mathematical abilities 29. Writing skills 30. Artistic skills
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Tools, Materials and Equipment	
1. Tape measure	24. Gouges
2. Chisels	25. Mallets
3. Rasp files	26. Aluminium
4. Wood/Timber	27. Wax
5. Flat knives	28. Paper
6. Metals	29. Stencils
7. Cutters	30. Printer
8. Liner	31. Computers
9. Sharpening Stone	32. Lenses
10. Bevels	33. Stones
11. Scribes	34. Copper
12. Hand Engraver	35. Timber
13. Razor blade	36. Plastics
14. Engraving Bits	37. Leather
15. Electrical engraver	38. Rubber
16. Pantograph Machine	39. Glass
17. Routers	40. Cork
18. PPE's	41. Paints
19. Laser Machine	42. Lubricant oil
20. Woods	43. Linseed oil
21. Drills	44. Squares
22. Hammer	
23. Polish	

Attitudes/ Traits/ Behaviour	Future Trends and Concerns
1. Self-motivated	1. Technological advancement
2. Trustworthy	2. Labour mobility
3. Honest	3. Price fluctuation for materials and products
4. Tolerant	4. Lack of infrastructure
5. Hardworking	5. Lack of professional classification
6. Team player	6. Competition from related companies
7. Disciplined	7. High costs of tools, materials and equipment
8. Good time manager	8. High taxation
9. Committed	9. Unfavourable government policies
10. Good listener	10. Having an engravers association
11. Flexible	11. Under looking engraved products.
12. Result oriented	12. Engraving service/ products are not considered at initial stages of budgeting due to lack of knowledge
13. Curious	13. Unavailability of suitable materials
14. Competitive	14. Destruction of finished products
15. Cooperative	15. Manual dexterity
16. Innovative and creative	16. Near vision
17. Physically fit	17. Arm steadiness
18. Knowledgeable	18. Arm dexterity
19. Patient	19. Visual colour discrimination
20. Polite	
21. Social	
22. Vigilant	
23. Calm	
24. Respectful	
25. Confident	
26. Intelligent	
27. Logical	
28. Trainable	
29. Tidy/Smart	
30. Kind	
31. Reliable	
32. Entrepreneur	
33. Risk taker	

2.0 ATP – PART II **Training Modules for Engraver**

- 2.1 A curriculum is a “guide /plan for teaching and learning” which provides a guide to teachers, instructors and learners. In the envisaged system of competence-based or outcome-oriented education and training (CBET), Curricula are no longer the benchmark against which assessment is conducted. It is rather the Occupational Profile that provides the benchmark for Curriculum development as well as assessment.
- 2.2 This modular format of the curriculum allows learners of ENGRAVER as an occupation to acquire job specific skills and knowledge (i.e., competencies) module by module. A single module can be accomplished within a relatively short duration of time allowing learners to move directly into an entry level job, do further modules and advance to higher levels of training. Modular courses allow more learners to access the training system because training centers, as well as companies can accommodate more students in a given period of time.
- 2.3 The modules were developed jointly by both instructors and job practitioners. They were developed using the Occupational Profile as a reference point and taking into account the specifications of training and learning outcomes.
- 2.4 The modules contain “Learning-Working Assignments” (LWAs) and related “Practical Exercises” (PEXs) as key elements.

LWAs are simulated or real job situations/assignments that are suitable for learning in a training environment (e.g., “small projects”). In a working environment, LWAs are real work situations.

PEXs are therefore sub-sets of an LWA.

- 2.5 In principle, and following the philosophy of Competence-Based Education and Training (CBET), the modules can be used as a guide for learning in a training Centre, at the workplace; or a combination of both.

WHO IS AN ENGRAVER QUALIFICATION LEVEL 1?

A **level engraver** is a skilled person who can create reliefs on flat surfaces using hand tools.

OVERVIEW OF MODULES FOR AN ENGRAVER LEVEL 1

Code	Module Title	Average duration	
		Contact hours	Weeks
UE/EN/M1.1	MANAGE TOOLS AND EQUIPMENT	80	02
UE/EN/M1.2	PRODUCE ENGRAVED WORK	240	04
UE/EN/M1.3	PERFORM BASIC ENTREPRENEURSHIP TASKS	360	06
Summary	3 Training Modules	680 hours	12 weeks

Note: Average duration is contact time but NOT calendar duration

It is assumed that:

- 1 day is equivalent to 8 hours of nominal learning and
- 1 month is equivalent to 160 hours of nominal learning.

Information given on the average duration of training should be understood as a guideline. Quick learners may need less time than indicated or vice versa.

At completion of a module, the learner should be able to satisfactorily perform the included Learning Working Assignments, their Practical Exercises and attached theoretical instruction, as the minimum exposure.

Prior to summative assessment by recognised Agencies, the users of these Module Guides are encouraged to carefully consider continuous assessment using samples of (or similar) performance (practical) and written test items available in part 3 of this ATP for **Engraver**.

Code	UE/EN/M1.1
Module title	M1.1: MANAGE TOOLS AND EQUIPMENT.
Related Qualification	<u>Part of:</u> Uganda Vocational Qualification (ENGRAVER UVQ2)
Qualification Level	1
Module purpose	At the end of this module, a trainee shall be able to effectively operate, maintain and care for tools and equipment that are used in engraving works
Learning-Working Assignments (LWAs)	<p>LWA 1/1: Procure tools and equipment LWA 1/2: Store tools and equipment LWA 1/3: Operate tools and equipment LWA 1/4: Maintain tools and equipment LWA 1/5: Perform occupational safety, health and environmental practices.</p> <p>Note:</p> <ol style="list-style-type: none"> <i>The learning exercises may be repeated till the trainee acquires a targeted competence.</i> <i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i>
Related Practical Exercises (PEXs)	<p>LWA1/1: Procure tools and equipment PEX 1.1: Identify tools and equipment needed PEX 1.2: Prepare budget PEX 1.3: Identify suppliers PEX 1.4: Seek quotations PEX 1.5: Compare prices PEX 1.6: Purchase tools and equipment</p> <p>LWA1/2: Store tools and equipment PEX 2.1: Receive tools and equipment PEX 2.2: Keep inventory / Perform stock taking PEX 2.3: Clean store PEX 2.4: Categorise tools and equipment PEX 2.5: Safeguard tools and equipment</p> <p>LWA1/3: Operate tools and equipment PEX 3.1: Set parameters PEX 3.2: Set tools and equipment</p>

	<p>PEX 3.3: Set template PEX 3.4: Position tools and equipment PEX 3.5: Engage tools and equipment.</p> <p>LWA 1/4: Maintain tools and equipment PEX 4.1: Remove damaged tools PEX 4.2: Service tools and equipment PEX 4.3: Test tools and equipment PEX 4.4: Clean tools and equipment PEX 4.5: Pack tools and equipment PEX 4.6: Sharpen tools PEX 4.7: Repair tools and equipment PEX 4.8: Carryout routine checking</p> <p>LWA 1/5: Perform occupational safety, health and environmental practices PEX 5.1: Identify health hazards PEX 5.2: Display safety signs PEX 5.3: Wear protective gear PEX 5.4: Manage waste PEX 5.5: Sensitize workers on safety and health issues PEX 5.7: Install safety equipment</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection, included in the related knowledge listings as well as in test items should be observed and demonstrated during LWAs and PEXs.
Pre-requisite modules	None
Related knowledge/ theory	<p><i>For Occupational theory suggested for instruction/ demonstration, the Trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Operation and usage of tools and equipment • Equipment and tool maintenance • Occupational health, safety and environmental protection practices • Care for and storage of equipment and tools • Waste management • Basics of procurement • Basic knowledge of tools and equipment used by engravers
Average duration of learning	<p>80 hours (10days) of nominal learning suggested to include:</p> <ul style="list-style-type: none"> • 3 days of occupational theory and

	<ul style="list-style-type: none"> • <i>7 days of occupational practice</i>
Suggestions on organization of learning	The acquisition of competencies (skills, knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.
Assessment	Assessment to be conducted according to established regulations by recognised assessment body using related practical and written test items from Item bank
Minimum required tools/ equipment/ implements or equivalent	Protective wear, sharpening disk stones, clamp, Bench vice, clamp Bench, Grinder, Drill, Screwdrivers, store, Hammer, pliers, tape measure, hacksaw, file
Minimum required materials and consumables or equivalent	Sandpaper, Oil, Material,
Special notes	The theory must be integrated into the practice during delivery.

Code	UE/EN/M2.2
Module title	M1.2: PRODUCE ENGRAVED WORKS
Related Qualification	Part of: Uganda Vocational Qualification (ENGRAVER UVQ1)
Qualification Level	1
Module purpose	At the end of this module, a trainee shall be able to make various engraved products on flat surfaces using various hand tools
Learning-Working Assignments (LWAs)	<p>LWA2/1: Develop designs</p> <p>LWA2/2: Prepare tools, materials and equipment</p> <p>LWA2/3: Incise designs</p> <p>LWA2/4: Etch design</p> <p>LWA2/5: Perform product finishing</p> <p>LWA2/6: Perform occupational safety, health and environmental practices</p> <p>Note:</p> <ol style="list-style-type: none"> <i>The learning exercises may be repeated till the trainee acquires a targeted competence.</i> <i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i>
Related Practical Exercises (PEXs)	<p>LWA3.1: Develop designs</p> <p>PEX 1.1: Perceive ideas</p> <p>PEX 1.2: Make Sketches</p> <p>PEX 1.3: Create final design</p> <p>PEX 1.4: Analyse design blueprints and patterns</p>
	<p>LWA3.2: Prepare tools, materials and equipment</p> <p>PEX 2.1: Identify tools, materials and equipment</p> <p>PEX 2.2: Clean tools and equipment</p> <p>PEX 2.3: Assemble tools, materials and equipment</p>
	<p>LWA3.3: Incise designs</p> <p>PEX 3.1: Acquire working patterns</p> <p>PEX 3.2: Select material</p> <p>PEX 3.3: Size material</p> <p>PEX 3.4: Prepare surface</p> <p>PEX 3.5: Trace patterns</p>

	<p>PEX 3.6: Make cuts following the design</p>
	<p>LWA3.4 Etch design</p> <p>PEX 4.1: Acquire patterns PEX 4.2: Select material PEX 4.3: Size material PEX 4.4: Prepare surface PEX 4.5: Trace patterns PEX 4.6: Prepare chemicals PEX 4.7: Apply chemical PEX 4.8: Analyse formation</p>
	<p>LWA3/5: Perform product finishing</p> <p>PEX 5.1: Dry work PEX 5.2: Clean work PEX 5.3: Smoothen work PEX 5.4: Create contrast PEX 5.5: Create installation accessories PEX 5.6: Protect product surface/ features PEX 5.7: Brand product</p>
	<p>LWA3.6: Perform occupational safety, health and environmental practices</p> <p>PEX 6.1: Identify hazards PEX 6.2: Display safety signs PEX 6.3: Wear protective gear PEX 6.4: Manage waste PEX 6.5: Sensitize workers on safety and health issues PEX 6.7: Install safety equipment PEX 6.8: Administer first aid PEX 6.9: Perform fire fighting</p>
Occupational health and safety	<p>Precautions, rules and regulations on occupational health, safety and environmental protection, included in the related knowledge listings as well as in test items should be observed and demonstrated during LWAs and PEXs.</p>
Pre-requisite modules	

Related knowledge/ theory	<p><i>For Occupational theory suggested for instruction/ demonstration, the Trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Techniques of engraving • Handling of materials, tools and equipment • Art and Design techniques • Occupational health, safety and environmental protection • Administration of first aid • Fire-fighting and control • Costing • Waste management • Material science for engravers • Tools, and principles involved in production of precision technical plans, blueprints, drawings, and models • The theory and techniques required to compose, produce, and perform works of music, dance, visual arts, drama, and sculpture.
Average duration of learning	<p>240 hours (30days) of nominal learning suggested to include:</p> <ul style="list-style-type: none"> • 10 days of occupational theory and • 20 days of occupational practice
Suggestions on organization of learning	<p>The acquisition of competencies (Skills-Knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.</p>
Assessment	<p>Assessment to be conducted according to established regulations by recognised assessment body using related practical and written test items from Item bank</p>
Minimum required tools/ equipment/ implements or equivalent	<p>Fire extinguisher, engraving chisel, hammer, engraver gauges, circuit blade, cutter, sharpening stone, grinding stone, files, bench grinder, drills, hand engraver, hand engraving pen, Stencil, measuring tape, razor blade, geometry set, wire brushes, sprayer, lenses, oil gun, first aid kit, protective gear, flat knife, engraving tapes, Micro engraver pen, scoopers, bevel, square ruler, engravers' kit, rugs/towels,</p>

Minimum required materials and consumables or equivalent	Glass, wood, metal, rubber, leather, water, paint, polish, oxidants, oak, Lubrication oils, soap, water, steel wool, sandpaper,
Special notes	

Code	UE/CF/M1.3
Module title	M2.3: PERFORM BASIC ENTREPRENEURSHIP TASKS
Related Qualification	<u>Part of:</u> Uganda Vocational Qualification (ENGRAVER UVQ1)
Qualification Level	1
Module purpose	At the end of this module, a trainee shall be able to effectively start, manage and sustain an engraving business
Learning-Working Assignments (LWAs)	<p>LWA3/1: Establish engraving business LWA3/2: Market products LWA3/3: Perform administrative roles LWA3/4: Perform occupational health, safety and environmental protection practices</p> <p>Note:</p> <ol style="list-style-type: none"> 1. <i>The learning exercises may be repeated till the trainee acquires a targeted competence.</i> 2. <i>The trainer is advised to deliver relevant theoretical instruction with demonstrations as required to perform each learning working assignment.</i>
Related Practical Exercises (PEXs)	<p>LWA3/1: Establish engraving business</p> <p>PEX 1.1: Determine location PEX 1.2: Carryout feasibility study PEX 1.3: Acquire premises PEX 1.4: Install workshop infrastructure PEX 1.5: Acquire business permits PEX 1.6: Prepare business plan PEX 1.7: Prepare budget PEX 1.8: Register business PEX 1.9: Mobilise funds PEX 1.10: Setup workshop PEX 1.11: Furnish premises PEX 1.12: Procure materials, tools and equipment PEX 1.13: Determine required resources</p>

	<p>LWA3/2: Market products</p> <p>PEX 2.1: Make marketing strategy/plan</p> <p>PEX 2.3: Brand products</p> <p>PEX 2.4: Label products</p> <p>PEX 2.5: Advertise products</p> <p>PEX 2.6: Perform after sale service</p> <p>PEX 2.7: Price products</p> <p>PEX 2.8: Transport products</p> <p>PEX 2.9: Package products</p> <p>PEX 2.10: Cost products</p> <p>PEX 2.11: Identify target customers</p> <p>LWA3/4: Perform administrative roles</p> <p>PEX 3.1: Recruit workers</p> <p>PEX 3.2: Assign work</p> <p>PEX 3.3: Prepare work schedules</p> <p>PEX 3.4: Orient workers</p> <p>PEX 3.5: Appraise workers</p> <p>PEX 3.6: Organise meetings</p> <p>PEX 3.7: Manage conflicts</p> <p>PEX 3.8: Supervise works</p> <p>PEX 3.9: Manage quality of works</p> <p>PEX 3.10: Keep financial records</p> <p>PEX 3.11: Keep customer records</p> <p>PEX 3.12: Keep staff records</p> <p>PEX 3.13: Train workers</p> <p>PEX 3.14: Remunerate workers</p> <p>PEX 3.15: Motivate workers</p>
	<p>LWA 4: Perform occupational health, safety and environmental protection practice</p> <p>PEX 4/1: Administer first aid</p> <p>PEX 4/2: Wear protective gear</p> <p>PEX 4/3: Sensitise staff on communicable diseases</p> <p>PEX 4/4: Manage wastes</p> <p>PEX 4/5: Provide sanitary facilities</p> <p>PEX 4/6: Install safety equipment</p> <p>PEX 4/7: Display safety signs</p> <p>PEX 5/8: Ensure personal hygiene</p>
Occupational health and safety	Precautions, rules and regulations on occupational health, safety and environmental protection included in the listed related knowledge should be observed and demonstrated during LWAs and PEXs.
Pre-requisite modules	None

Related knowledge/ theory	<p><i>For occupational theory suggested for instruction/ demonstration, the trainer is not limited to the outline below. In any case, related knowledge/ theory may be obtained from various recognised reference materials as appropriate:</i></p> <ul style="list-style-type: none"> • Marketing • Processes and procedures for business registration • Basics of human resource management • Basis of business management • Customer care • Basics of Communication • Occupational health, safety and environmental protection • Waste management • Basics of resource mobilisation and utilisation • Hygiene and sanitation
Average duration of learning	<p>360hrs (45 days) of nominal learning suggested to include</p> <ul style="list-style-type: none"> • <i>15 days of occupational theory and</i> • <i>30 days of occupational practice</i>
Suggestions on organization of learning	<p>The acquisition of competencies (skills. Knowledge, attitudes) described in this module may take place at a training centre or its equivalent provided all equipment and materials required for training are in place.</p>
Assessment	<p>Assessment to be conducted according to established regulations by recognised assessment body using related practical and written test items from Item bank</p>
Minimum required tools/ equipment/ implements or equivalent	<p>Dustbins, fire extinguisher, Protective gears, furniture, first aid kit</p>
Minimum required materials and consumables or equivalent	<p>Stationary</p>
Special notes	

ATP- PART III

Assessment Instruments for Engraver

- 3.1** Assessment of occupational competence is the procedure by which evidence is gathered and judged to decide if an individual (candidate) has met the stipulated assessment standards.
- 3.2** Assessment of occupational competence should comprise of both practical (Performance) testing and written (theory/knowledge) testing.
- 3.3** Based on the Occupational Profile and Training Modules, a combined panel of job practitioners and Instructors developed a substantial number of test items for assessing (practical) performance as well as items for assessing occupational knowledge (theory) all stored in an electronic Test Item Bank (TIB) at the Directorate of Industrial Training.
- 3.4** Performance (Practical)Test Items (PTI)are closely related to typical work situations in Ugandan business enterprises. They comprise of a test assignment for candidates and assessment criteria and/or scoring guides for assessors' use.
- 3.5** Written Test items (WTI) for written testing of occupational theory, (knowledge) are presented in different forms which include:
- short answer test items
 - Multiple choice test items
 - Matching test items.
- These WTIs herein focus on functional understanding as well as trouble-shooting typically synonymous with the world of work.
- 3.6** Composition of assessment/test papers will always require good choices of different types of WTI in order to ensure the assessment of relevant occupational knowledge required of candidates to exhibit competence.
- 3.7** The test items contained in the Test Item Bank may be used for continuous/formative assessment during the process of training as well as for summative assessment of candidates who have acquired their competences non-formally or informally.
- 3.8** In this document, samples of test items for assessing both performance (practical) and occupational knowledge (theory) of a **ENGRAVER** are included. A larger selection of test items can be obtained as electronic or printed copies from designated outlets.

3.9 Overview of test item samples included:

No.	Type of Test Item	Numbers included
1	Written (Theory)- Short Answer	2
2.	Written (Theory)- Multiple Choice	1
3.	Written (Theory)- Matching item- Generic	1
4.	Written (Theory)- Matching item (Work sequence)	1
5.	Performance (Practical) Test Items	1
	Total	6

WRITTEN TEST ITEMS (SAMPLES)

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 1			
Occupational Title:	Engraver			
Competence level:	1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C1			
Date of OP:	January, 2022			
Related module:	M1.2			
Time allocation:	3 minutes			

Test Item	An engraver is.....?
Answer spaces	(i)
Expected key (answers)	An engraver is a skilled person who can create depressions (incision) or relief to produce a design onto a material substance.

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 2			
Occupational Title:	Engraver			
Competence level:	1			
Code no.				
Test Item type:	Short answer	√		
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
Complexity level:	C1			
Date of OP:	January, 2022			
Related module:	M2.3			
Time allocation:	2minutes			

Test Item	Mention the five necessary conditions required for engraving to take place.
Answer spaces	(i) (ii) (iii) (iv) (v)
Key (answer)	(i) Availability of a hard material (ii) Availability of a design (iii) Availability of tools (iv) Availability of chemicals (v) Availability of an engraver

DIT/ QS	Test Item Database Written (Theory) Test Item- No. 3			
Occupational Title:	Engraver			
Competence level:	1			
Code no.				
Test Item type:	Short answer			
	Multiple choice	√		
	Matching item	Generic	Cause-Effect	Work-sequence
Complexity level:	C2			
Date of OP:	January, 2022			
Related module:	M2.3			
Time allocation:	2 minutes			

Test Item	Express 500mm in centimetres
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Answer spaces	A. 50cm B. 5cm C. 500cm D. 0.5cm
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Key (answer)	A. 50cm
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DIT/ QS	Test Item Database Written (Theory) Test Item- No. 4		
Occupational Title:	Engraver		
Competence level	1		
Code no.			
Test Item type:	Short answer		
	Multiple choice		
	Matching item	Generic	Cause- Effect
√			
Complexity level:	C2		
Date of OP:	January, 2022		
Related module:	M2.5		
Time allocation:	5 minutes		

Test item	Match the following tools to their functions.
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Column A	
1	Mallet
2	Chisel
3	Gouge
4	Drill

Column B	
A	Shaping material
B	Smoothering material
C	Making holes
D	Final finishing
E	Maintaining tools and equipment
F	Defining pattern details
G	Creating impact

Key (answer)	1-G, 2-A, 3-F, 4-C
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DIT/ QS	Test Item Database Written (Theory) Test Item- no. 5			
Occupational Title:	ENGRAVER			
Competence level:	1			
Code no.				
Test Item type:	Short answer			
	Multiple choice			
	Matching item	Generic	Cause- Effect	Work-sequence
				√
Complexity level:	C2			
Date of OP:	January, 2022			
Related module:	M1.2			
Time allocation:	4mins			
Marks allocation	4 marks			

Test item	Re-arrange the following steps in incising in the order of performance	
Column A (chronology)	Column B (work steps) in wrong chronology order	
1 st	A	Start incising
2 nd	B	Prepare the surface
3 rd	C	Get the design
4 th	D	Select appropriate tools
5 th	E	Interpret the design

Key (answer)	1: C, 2: E, 3:B, 4:D, 5:A
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PERFORMANCE TEST ITEMS (SAMPLES)

DIT/ QS	Test Item Database Performance Test Item- No.
Occupational Title:	ENGRAVER
Competence level:	1
Code no.	
Test Item:	On a timber measuring 40x10 cm, make a door label with relief letters of the word OFFICE leaving 2cm on either side.
Complexity level:	
Date of OP:	January, 2022
Related modules:	
Related skills and knowledge:	Measurements, cutting skills, use of tools and materials, reliefs, engraving techniques and processes, designing, formatting skills, perfectionism, accuracy.
Required tools, Materials and Equipment:	Timber, tape measure, square ruler, micro engraver pen, U gouge, V gouge, sand paper, hand-saw, mallet, chisels, work table with clamps, protective gear, geometry set, polish/paint/vanish, brush, calculator, drill, bits, paper,
Time allocation:	10 hours
Preferred venue:	Gallery/ Studio
Remarks for candidates	Provide PPE Observe safety and health at work
Remarks for assessors	Provide candidates with all the necessary resources for the assessment

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
1	Preparation of material	Wore protective gear		3
		Selected tools and materials	2	
		All required tools and materials seen on the work area		2
		Took measurements	1	
		Cut timber	2	
		Timber corners cut to 90 degrees observed		3
		Size of 40x10cm verified		4
		Planed timber	2	
		levelled surface achieved		2
		Took measurements	1	
		2cm markings on either sides observed		2
		Constructed letters on paper/surface	3	
		Equally spaced consistent letters observed		4
		Letters centered on the work surface		2
2	Making relief	Selected required tools	2	
		Cut edges of the letters	2	
		Cut out unwanted parts	2	
		Use of right tool observed		2
		Smooth letter edges observed		4
3	Perform finishing	Apply sand paper on the surface	2	
		Smooth surface achieved		3
		Created contrast	2	
		Relief with a different colour from the background observed		4
		Applied finishing material	2	
		A clean uniform layer of finishing observed		3

#	Assessment criteria	Scoring guide	Max. Score	
			Process	Result
		Provided provision for fixing	3	
		Aligned holes on two opposite sides of the works piece observed from left to right.		4
		Counter-sunk holes observed		4
4.	Cleaning up	Cleaned work area	2	
		Cleaned tools	2	
		Assembled tools	2	
	TOTAL		32	45
	MAXIMUM SCORE(Y)	$\frac{X}{Y} \times 100$		

4.0 ATP- PART IV

INFORMATION ON THE DEVELOPMENT PROCESS

4.1 Occupational Profile Development (January 2022)

The assessment and Training Package was exclusively developed by job practitioners who were working in the occupation of **Engraver**

The job expert panel, guided by UVQF facilitators developed the Occupational Profile that mirrors duties and tasks performed in the world of work and also provided additional generic information regarding the occupation.

4.2 Training Modules Development (January 2022)

Based on the Occupational Profile for Engraver of **January 2022**, Training Modules were developed by job practitioners, guided by UVQF Facilitators.

4.3 Test Item Development (January 2022)

Based on the Occupational Profile for Engraver of **January 2022**, and Training Modules, Test Items were developed by combined panels of instructors and job practitioners, guided by UVQF Facilitators.

4.4 Methodology

The rationale for the Assessment and Training Package review was to link Vocational Education and Training to the real world of work by bridging Occupational Standards to Training Standards through industry-led Standards-Based Assessment.

Active participation of both instructors and job practitioners' panels consolidated the development philosophy.

The panelists worked as teams in workshop settings complemented by off-workshop field research and literature review activities including international benchmarking.

4.5 Developing Panel

The participating panel of Job Practitioners required for different stages of the assessment training package i.e., occupational profile, training modules, assessment instruments were constituted by members from the following organizations;

No.	Name	Institution/ Organization
1.	MS. Ahimbisibwe Deborah	Ntare School
2.	Mr. Busingye Peace	MoES
3.	Mr. Banfundizeki Robert Deus	UNEB
4.	Mr. Ayen Peter	Dr. Obote College Boroboro
5.	Mr. Kasuja Henry	St. Henrys College Kitovu
6.	Dr. Kavuma Abubaker	NCDC
7.	Mr. Kimbugwe Daniel	Engraving Systems Ltd
8.	Mr. Kiyaga Anthony	Kings College Buddo
9.	Mr. Makanga Jacob	St. Peters SS Naalya
10.	Mr. Mugambe Ezra	Kampala Engravers Ltd
11.	Mr. Ssegamwenge Charles	City Engravers Ltd

4.6 Facilitator team

This Assessment and Training Package was developed by a Facilitator team listed below:

1. **Facilitators (Occupational Profile Development)** - Ms. Kyarizi Lovance, Ms. Asimwe Sarah.
2. **Facilitators (Training Modules Development)** – Ms. Kyarizi Lovance, Ms. Asimwe Sarah
3. **Facilitators (Test Item Development)** - Ms. Kyarizi Lovance, Ms. Asimwe Sarah.
4. **Data entrants-** Ms. Arineitwe Ruth, Ms. Namale Sheila
5. **IT Support** – Mr. Lubowa Christopher
6. **Coordinators** – Ms. Mukyala Ruth Ag. DD, DIT, Qualification Standards Dept. DIT and Mr Byakatonda Patrick, Ag. Director, DIT

4.7 Reference time:

The Assessment and Training Package was compiled in January 2022 and may be periodically revised to match the dynamic trends in the occupation and hence issued in different versions:

References

1. Joseph Cundall (2018). A Brief History of Wood-engraving from Its Invention
2. William Young Ottley (2019). **An Inquiry into the Origin and Early History of Engraving, Upon Copper and in Wood:** With an Account of Engravers and Their Works, from the Invention of Chalcography by Maso Finiguerra, to the Time of Marc' Antonio Raimondi