



education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL CERTIFICATES (VOCATIONAL)

SUBJECT GUIDELINES

CONSTRUCTION MASONRY AND TILING

NQF LEVEL 2

September 2007

INTRODUCTION

A. What is Construction Masonry and Tiling?

Construction Masonry and Tiling provides training to students in construction masonry and tiling activities in construction processes. It equips students to become part of the mainstream construction industry.

B. Why is Construction Masonry and Tiling important in the Building and Civil Construction programme?

Construction Masonry and Tiling provides learners with practical means to understand and become part of the mainstream construction industry.

C. The link between the Construction Masonry and Tiling Learning Outcomes and the Critical and Developmental Outcomes

Students will be able to perform masonry and tiling activities related to civil construction. They will work effectively with the other team members to complete plastering and tiling activities. Construction Masonry and Tiling also prepares students to communicate understanding through the identification and use of machines, tools, methods and processes to perform masonry and tiling activities.

D. Factors that contribute to achieving the Construction Masonry and Tiling Learning Outcomes

- Thorough preparation for teaching and learning activities
- An environment conducive to teaching and learning through effective learner support, motivation, commitment and a positive attitude
- An interest in Construction Masonry and Tiling

CONSTRUCTION MASONRY AND TILING – LEVEL 2

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1 DURATION AND TUITION TIME

This is a one-year instructional programme comprising 200 teaching and learning hours. The subject may be offered on a part-time basis provided the student meets all the assessment requirements.

Students with special education needs (LSEN) must be catered for in a way that eliminates barriers to learning.

2 SUBJECT LEVEL FOCUS

The student will be able to:

- Perform masonry and tiling and civil construction activities related to masonry and tiling.
- Identify and use machines, tools, methods and processes to perform masonry and tiling activities.
- Explain and apply health and safety procedures and practices.

3 ASSESSMENT REQUIREMENTS

3.1 Internal assessment (50 percent)

Internal assessment refers to continuous assessment which is college based. The achievement of Learning Outcomes counts towards the achievement of a qualification. All internal assessments must be finalised by an assessor who has been declared competent by an accredited service provider.

3.1.1 Theoretical component

The theoretical component forms 40 percent of the internal assessment mark.

Internal assessment of the theoretical component in Construction Masonry and Tiling Level 2 takes the form of observation, class questions, group work, informal group competitions with rewards, individual discussions with students, class, topic and semester tests and internal examinations. Lecturers can observe students when marking exercises from the previous day and asking class questions.

Assignments, case studies and tests can be completed at the end of a topic. Tests and internal examinations must form part of the internal assessment.

3.1.2 Practical component

The practical component forms 60 percent of the internal assessment mark.

Practical components include applications and exercises. All practical components must be indicated in a Portfolio of Evidence (PoE).

Internal assessment of the practical component in Construction Masonry and Tiling Level 2 takes the form of assignments, practical exercises, case studies and practical examinations in a simulated construction environment.

Students may complete practical exercises daily. Assignments and case studies can be completed at the end of a topic. Practical examinations can form part of internal practical assessment.

- **Some examples of practical assessments include, but are not limited to:**

- A. Presentations (lectures, demonstrations, group discussions and activities, practical work, observation, role-play, independent activity, synthesis and evaluation)
- B. Exhibitions by students
- C. Visits undertaken by students based on a structured assignment task
- D. Research
- E. Task performance in a “Structured Environment”

- **Definition of the term “Structured Environment”**

For the purposes of assessment, “Structured Environment” refers to a simulated workplace or workshop environment. Activities in the simulated workplace or environment must be documented in a logbook with a clear listing of the competencies to be assessed. The following information must be contained in the logbook:

- Nature of department or environment in which practical component was achieved
- Learning Outcomes
- Activities in the environment with which to achieve the Learning Outcomes
- Time spent on activities
- Signature of lecturer or supervisor and student

For the logbook to be regarded as valid evidence, it must be signed by an officially assigned supervisor.

• Evidence in practical assessments

All evidence pertaining to evaluation of practical work must be reflected in the students' Portfolio of Evidence (PoE). The tools and instruments constructed and used to conduct these assessments must be clear from the evidence contained in the Portfolio of Evidence (PoE).

3.1.3 Processing of internal assessment mark for the year

A year mark out of 100 is calculated by adding the marks of the theoretical component (40 percent) and the practical component (60 percent) of the internal continuous assessment (ICASS).

3.1.4 Moderation of internal assessment mark

Internal assessment is subjected to internal and external moderation procedures as set out in the *National Examinations Policy for FET College Programmes*.

3.2 External assessment (50 percent)

A National Examination is conducted annually in October or November by means of a paper(s) set and moderated externally. A practical component will also be assessed.

External assessment details and procedures are set out in the *Assessment Guidelines: Construction Masonry and Tiling (Level 2)*.

4 WEIGHTED VALUES OF TOPICS

TOPICS	WEIGHTED VALUE
1 Set Out and Prepare Construction Masonry Work Area	5
2 Mix Mortar and Lay a Half-brick and a One-brick Wall in Stretcher Bond	10
3 Set Out, Excavate and Cast Concrete Strip Foundations and Build Foundation Walling	20
4 Build Masonry Superstructures Using Solid Units	30
5 Prepare for Plastering	5
6 Apply Plaster to Surfaces	15
7 Plan and Prepare to Tile	5
8 Apply Tiles to Plastered Surfaces	10
TOTAL	100

5 CALCULATION OF FINAL MARK

Internal assessment mark: Student's mark/100 x 50 = a mark out of 50 (a)

Examination mark: Student's mark/100 x 50 = a mark out of 50 (b)

Final mark: (a) + (b) = a mark out of 100

All marks are systematically processed and accurately recorded to be available as hard copy evidence for, amongst others, reporting, moderation and verification purposes.

6 PASS REQUIREMENTS

The student must obtain at least fifty (50) percent in ICASS and fifty (50) percent in the examination.

7 SUBJECT AND LEARNING OUTCOMES

On the completion of Construction Masonry and Tiling Level 2, the student should have covered the following topics:

- Topic 1: Set Out and Prepare Construction Masonry Work Area
- Topic 2: Mix Mortar and Lay a Half-brick and a One-brick Wall in Stretcher Bond
- Topic 3: Set Out, Excavate and Cast Concrete Strip Foundations and Build Foundation Walling
- Topic 4: Build Masonry Superstructures Using Solid Units
- Topic 5: Prepare for Plastering
- Topic 6: Apply Plaster to Surfaces
- Topic 7: Plan and Prepare to Tile
- Topic 8: Apply Tiles to Plastered Surfaces

7.1 Topic 1: Set Out and Prepare Construction Masonry Work Area

Subject Outcome: Prepare the work area and select, use and maintain tools, equipment and machinery.

Learning Outcomes:

The student should be able to:

- Select appropriate tools, equipment and materials.
- Use tools, equipment and materials to complete masonry work within specified timeframes.
- Maintain neat and clean work area.

7.2 Topic 2: Mix Mortar and Lay a Half-brick and a One-brick Wall in Stretcher Bond

Subject Outcome 1: Mix mortar.

Learning Outcomes:

The student should be able to:

- Measure a batch of cement, lime and building sand using builders' buckets.
Range: Mixing ratio 1 lime:5 building sand
- Mix the dry material thoroughly.
- Add water and mix a batch of mortar to the consistency required for bricklaying.

Subject Outcome 2: Lay a half-brick and a one-brick wall in stretcher bond between columns or profiles.

Learning Outcomes:

The student should be able to:

- Mark the gauge on the columns or profiles at an appropriate level from the floor.
Range: Gauge 85 mm
- Lay a half-brick and a one-brick wall in stretcher bond between columns or profiles.
- Use plaster bricks and build brick work to a prescribed height in stretcher bond.
Range: Ten courses high and ten bricks long
- Ensure that the face of the wall is flat and the joints and perps are full and flush.
- Plumb and level the brick work.

7.3 Topic 3: Set Out, Excavate and Cast Concrete Strip Foundations and Build Foundation Walling

Subject Outcome 1: Prepare site and set out building foundations.

Learning Outcomes:

The student should be able to:

- Clear all debris and level the building site.
- Transfer foundation lines accurately to the ground.

Subject Outcome 2: Excavate foundation trenches and evaluate and report soil conditions.

Learning Outcomes:

The student should be able to:

- Excavate trenches in accordance with specified dimensions and building regulations.
- Take precautions for soft and hard spots and ensure trenches are free of surface water.
- Install reinforcement where required.

Subject Outcome 3: Install level pegs and step foundations where required.

Learning Outcomes:

The student should be able to:

- Ensure the difference in levels in the step foundation is equal to the number of courses required.
- Install pegs level and to the correct height.

Subject Outcome 4: Mix, cast and level concrete and introduce steps.

Learning Outcomes:

The student should be able to:

- Apply correct masonry bond and mortar ratios.
- Level concrete to the tops of the pegs.

Subject Outcome 5: Build and finish foundation walls up to damp proof course.

Learning Outcomes:

The student should be able to:

- Build the foundation wall with plaster bricks on the centre of the strip foundation.
Range: Foundation walls include solid and cavity construction in hollow or solid masonry units.
- Lay the damp proof course, fully lapped at the corners, at the appropriate level above ground level.
Range: Above ground level at 150 mm
- Apply the correct gauge according to specifications, starting at the strip foundation.
- Ensure the walls are straight, flat, level and plumb.
- Adhere to safety requirements.

7.4 Topic 4: Build Masonry Superstructures Using Solid Units

Subject Outcome 1: Prepare work area and select, use and maintain tools, equipment and materials.

Learning Outcomes:

The student should be able to:

- Select appropriate tools, equipment and materials.
- Use and maintain tools, equipment and materials.

Subject Outcome 2: Set up vertical profiles and set out walls.

Learning Outcomes:

The student should be able to:

- Set up vertical profiles plumb, in line and level.
- Mark off profiles according to predetermined course heights.
- Install damp proof course and set out doorframes and window frames.

Subject Outcome 3: Build walls and install door and window frames.

Learning Outcomes:

The student should be able to:

- Install door and window frames plumb and level to the correct height.
- Build walls plumb, in line and level.
- Install horizontal reinforcement to accommodate specified movement and strength requirements.
- Insert roof ties where required.
- Build internal sill with quarry tiles.
- Build external sill with brick and edge.
- Install beam filling.
- Build walls according to building plan.

7.5 Topic 5: Prepare for Plastering

Subject Outcome: Identify and prepare work area and select, use and maintain tools.

Learning Outcomes:

The student should be able to:

- Identify correct work area according to drawings.
- Select appropriate tools, equipment and materials.
- Measure and set out work area.
- Remove protrusions, dust and dirt.
- Mix plaster, screed and granolithic.
- Maintain tools, equipment and materials.

7.6 Topic 6: Apply Plaster to Surfaces

Subject Outcome 1: Plaster walls and other surfaces.

Learning Outcomes:

The student should be able to:

- Apply plaster screed to entire wall and column surfaces according to line and level specifications.
- Plaster reveals and sills.

Subject Outcome 2: Repair cracked and damaged plaster.

Learning Outcomes:

The student should be able to:

- Cut out and fill plaster cracks with mortar.
- Identify, cut out, remove and repair damaged plaster with mortar.
- Repair rough cast plaster wall to match the existing plaster finish.

7.7 Topic 7: Plan and Prepare to Tile

Subject Outcome 1: Set out work for tiling.

Learning Outcome:

The student should be able to:

- Measure and set out work area according to drawings and specifications.

Subject Outcome 2: Prepare work surfaces for tiling.

Learning Outcomes:

The student should be able to:

- Remove protrusions.
- Use correct materials, tools and equipment.
- Identify and correct surface cracks and defects.
- Correct levels and lines.
- Remove dust and dirt.
- Mix adhesive and grout.

7.8 Topic 8: Apply Tiles to Plastered Surface

Subject Outcome 1: Tile plastered walls and columns.

Learning Outcomes:

The student should be able to:

- Cut and apply tiles with adhesive to plastered walls and columns.
- Grout gaps between tiles with tile grout.
- Clean the tiled surface.

Subject Outcome 2: Tile around a bath.

Learning Outcomes:

The student should be able to:

- Apply tiles to surface around a bath.
- Neatly cut tiles around the bath.
- Fill gaps between tiles with tile grout.

Subject Outcome 3: Tile around an attached pier.

Learning Outcomes:

The student should be able to:

- Apply tiles with adhesive to the front-projecting surface of a pier.
- Fill gaps between tiles with tile grout.
- Clean the tiled surfaces.
- Prepare floor screed and apply tiles with adhesive.
- Equally space cut tiles along the perimeter of the floor.

Subject Outcome 4: Lay tiles to screed floor.

Learning Outcomes:

The student should be able to:

- Prepare floor screeds and apply tiles with adhesive.
- Equally space cut tiles along the perimeter of the floor.
- Lay tiles on concrete steps.
- Plaster risers and screed treads of steps.
- Apply bull nose tiles using slush (cement or water) paste.
- Tightly butt joint between treads and risers.

8 RESOURCE NEEDS FOR TEACHING CONSTRUCTION MASONRY AND TILING – LEVEL 2

8.1 Physical resources

- Classroom
- Teaching aids and pre-designed models and structures
- Work tables, work area, chairs and chalkboards
- Overhead projector

8.2 Human resources

The lecturer should have an acceptable NQF level qualification in Building and Civil Construction and should preferably be a registered assessor. The lecturer should be committed to continually improving and expanding his or her knowledge and skills.

8.3 Other resources

- Budget according to Construction Masonry and Tiling requirements