

**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

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**-Module Number- 0074747 -Session-1987-88**  
**-Superclass- YD**

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**-Title- PATTERNMAKING METHODS: PATTERN  
MILLING (x 1/2)**

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**-DESCRIPTION-**

Type and Purpose A specialist module which enables students following a career in the foundry industry to acquire a knowledge of and be able to use the pattern milling machine.

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Preferred Entry Level 74746 Patternmaking Methods: Machine Tools

Learning Outcomes The student should:

1. know the controls of the pattern milling machine and their function;
2. know the range, function and application of cutting tools;
3. set up and use a pattern milling machine.

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Content/ Context Safety regulations and safe working practices and procedures should be observed at all times.

Corresponding to Learning Outcomes 1-3:

1. Isolation of machine;  
positioning controls;  
cutter controls;  
positioning of guards or fences;

adjusting moving parts including simple maintenance and lubrication.

2. Range and use of tools.

Mounting of cutting tools.

3. Preparation to workpiece for setting up.

Setting up workpiece on table.

Use of rotary table.

Use of clamps.

Setting up workpiece.

Selecting and safely attaching cutter and cutting:-

- a) circular outside and inside diameters;
- b) core box;
- c) by use of rotary table.

Suggested Learning and Teaching Approaches

The students should not use the profile machine until they understand clearly the dangers and safety factors.

The lecturer should demonstrate the features, functions and capability of the machine to groups and supplement his teaching with visual aids.

The learning should take place in a practical workshop where the material prepared with module 74746 Patternmaking Methods: Machine Tools could be used for practical assessments.

Assessment Procedures

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each Learning Outcome.

The following abbreviations are used below:

- |    |                          |
|----|--------------------------|
| LO | Learning Outcome         |
| IA | Instrument of Assessment |
| PC | Performance Criteria     |

- LO1 IA Oral exercise based on an observation checklist.
- PC The student correctly:
- (a) identifies each control;
  - (b) states the function of each control.
- LO2 IA A minimum of five short answer questions.
- PC The student correctly identifies three types of cutter and describes the cutting action and surface finish given in each case.
- LO3 Practical exercise used in conjunction with an observation checklist in which the student is required to set up and use a pattern milling machine.
- PC The student correctly:
- (a) isolates machine before setting up work;
  - (b) prepares workpiece correctly before setting up;
  - (c) sets up correctly:
    - (i) circular pattern for outside cutting;
    - (ii) core box for cutting;
    - (iii) circular pattern on rotary; table;
  - (d) clamps workpieces correctly and adjusts guards and checks clearances;
  - (e) cuts, within specified tolerances and surface finish:
    - (i) a circular flange or ring pattern built up in segments;
    - (ii) a core box half;
    - (iii) a circular or ring pattern using rotary table;

- (f) observes safe working practices.

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