

-SQA-SCOTTISH QUALIFICATIONS AUTHORITY

**Hanover House
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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- 0064728 -Session-1986-87
-Superclass- YD
-Title- PATTERNMAKING METHODS 1

-DESCRIPTION-

Type and Purpose A specialist module which enables the student to understand patternmaking methods and materials.

Preferred Entry Level 04726 Introduction to Foundry Patternmaking Methods (1/2);
04727 Introduction to Foundry Moulding Methods(1/2).

Learning Outcomes The student should:

1. know the properties, applications and relative costs of patternmaking materials;
2. design and construct a pattern for a simple component and produce the casting;
3. be able to produce patternmaker's layouts for a variety of components;
4. know and comply with regulations and procedures and use safe working practices specified for equipment and work areas.

Content/ Context Corresponding to the Learning Outcomes:

1. elementary consideration of the various patternmaking materials with regard to properties, sources and forms of supply, relative costs, applications, performance during manufacture and service, use and storage.
2. appreciation of:
 - (a) pattern construction methods for one piece, split, shell and skeleton patterns;

- (b) patternmaking allowances, joint lines, coreprints;
 - (c) mould and core production.
3. interpretation of engineering drawings, their relationship to pattern construction and foundry production systems.
 4. safety precautions and legislation applicable to pattern shops and foundries.

Suggested Learning and Teaching Approaches

This module should be presented in a manner that will allow classroom work to be supplemented with workshop activities and group discussion.

Relating to Learning Outcomes:

1. group discussion and examination of a variety of patternmaking materials;
2. workshop based: terminology and principles should be introduced at each stage in the manufacturing process;
3. the emphasis should be on interpretation of engineering drawings and the application of this information to pattern construction and foundry production systems;
4. safety, safe practices, care and use of equipment should be an integral part of all activities.

Assessment Procedures

All learning outcomes must be validly assessed.

The student must be informed of the tasks which contribute to summative assessment. Any unsatisfactory aspects of performance should, if possible, be discussed with the student as and when they arise.

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 Short answer questions.

PC The student correctly describes the properties, costs and applications of patternmaking materials.

LO2 IA Pattern equipment.

PC The student:

- (a) designs and produces pattern equipment in an agreed time in which:
 - (i) the fundamental dimensions are within agreed tolerances;
 - (ii) quality is comparable to an agreed exemplar;
- (b) produces a casting ,the quality of which is comparable to an agreed exemplar.

LO3 IA Graphical communication exercise.

PC The student produces a patternmaker's layout for a casting. The layout should include sufficient detail to determine the pattern construction method and the foundry production system.

LO4 IA Observation checklist (in which the following elements must be included) and discussion between lecturer and student.

PC The student:

- (a) wears all necessary safety clothing and equipment;
- (b) behaves in a manner appropriate to the working environment (with particular regard to the hazards associated with the handling of hot liquid metals);
- (c) uses tools and equipment safely.