

**-SQA-SCOTTISH QUALIFICATIONS AUTHORITY**

**Hanover House  
24 Douglas Street  
GLASGOW G2 7NG**

**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

**-Module Number- 0075518 -Session-1987-88**

**-Superclass- XH**

**-Title- CENTRAL HEATING BOILER HOUSE PLANT AND EQUIPMENT**

**-DESCRIPTION-**

Type and Purpose A specialist module which enables the student to acquire a basic knowledge of boilers and ancillary equipment.

Preferred Entry Level 75526 Heating Systems 2

Learning Outcomes The student should:

1. know the method of operation of gas, oil and solid fuel boilers;
2. know the function and method of operation of components used in boilerhouse installations;
3. locate and rectify faults and hazards associated with boilerhouse installations;
4. comply with regulations and procedures, and use safe working practices specified for equipment and work areas.

Content/ Context Corresponding to Learning Outcomes 1-4:

1. The operation of central heating boilers for low, medium and high pressure installations including:
  - (a) natural draught and forced air gas;
  - (b) wall flame vapourising and pressure jet oil;

- (c) gravity and hopper fed solid fuel;
  - (d) the working principles of gas, oil and solid fuel boilers.
2. (a) circulating, boiler feed, sump and submersible pumps;
  - (b) regulating and pressure reducing valves;
  - (c) fire valves and combustion controls;
  - (d) steam trap assemblies;
  - (e) oil line assemblies.
- Method of operation of the above components.
3. Boiler and equipment faults, maintenance procedures to prevent faults re-occurring. Procedures for correcting faults.
  4. Safety, safe practices care in use of equipment should be an integral part of all module activities.

Suggested  
Learning and  
Teaching  
Approaches

Demonstration followed by group discussion.  
Students to work in pairs on practical projects.

Simulations in the workshop and laboratory. Site visits.

Manufacturers literature can be used as aids.

'Cut away' visual aids to show the working principles of valves and controls could be referred to and used.

The students could dismantle and assemble components.

The student could also keep a log book.

Assessment  
Procedures

Acceptable performance in the module will be satisfactory achievement of the performance criteria specified for each learning outcome.

Where cutting scores are stated these are intended to be for guidance. The precise cutting score for a test will depend on the difficulty of the test and will have to be decided by the Tutor aided by the Assessor.

The following abbreviations are used below:

LO Learning Outcome  
IA Instrument of Assessment  
PC Performance Criteria

LO1 IA Written and graphics exercise in which the student is required to describe the method of operation of the following boilers:

- (a) natural draft gas;
- (b) pressure jet oil;
- (c) gravity fed solid fuel.

PC Cutting score 70%.

LO2 IA Ten short answer questions in which the student is required to describe the function, and method of operation of the following components:

- (a) circulating, boiler feed, sump and submersible pumps;
- (b) regulating and pressure reducing valves;
- (c) fire valves and combustion controls;
- (d) steam trap assemblies;
- (e) oil line assemblies.

PC Cutting score 70%.

LO3 IA Practical exercise - the student is required to identify the faults on a given boilerhouse installation into which faults have been introduced and to rectify them.

PC All faults should be located and rectified.

LO4 IA Observation of student while carrying out practical activities.

PC The student:

- (a) wears all necessary clothing and equipment;
- (b) behaves in a manner appropriate to the working environment;
- (c) use tools and equipment safely.