

ACEA Basic Course Outline

Module 1 – Induction

- Introduction to the ABBE award
- The Units & Elements of The National Occupational Standards
- Compiling The Portfolio Content
- Evidence Required
- The Property Matrix

Module 2 – Legislative Framework

- The Energy Performance of Buildings Directive (EPBD)
- CIBSE TM44 Methodology
- The “F-Gas” Regulation
- Pressure Systems Safety Regulations
- Building Regulations Part L
- Primary Aims of the Inspections
- Scope & Limitations

Module 3 – AC System Characteristics and Capacities

- The Vapour Compression Refrigerant Cycle
- Refrigerant Relationships – Temperature v Pressure
- Capacity Ranges of Split & Multi Split Systems
- System Limitations
- Oversized or Undersized – The Effects
- Refrigerant Charging Issues

Module 4 – Principles of RAC Operation

- Split Systems – The Basics
- Identifying & Understanding AC Systems
- Cooling Only or Heat Pumps
- Multi Split Systems
- Understanding Variable Refrigerant Flow (VRF) Systems
- Interconnecting Pipework

Module 5 - Controls & Ancillary Components

- Controls in General
- Safety Controls
- Building energy Management Systems (BEMS/BMS)
- Zone Controls
- Cooling Only System Control
- Heat Pump System Control
- Principle Operation of Condenser & Evaporator Coils
- Air Filters
- Fans & Condensate Pumps

Module 6 – Inspection & Assessment

- Differentiating Level 3 & Level 4 Systems
- Making An Inspection
- The Safe Use of Tools & Equipment
- Building Heat Load Calculations
- Internal & External Equipment Inspection
- Electricity Metering
- Unit Sampling
- Inspection Health & Safety

Module 7 – Records, Documents & Sources of Information

- Sources of Documentation
- Technical Data Plates and Equipment Distributors
- OEM Operation & Maintenance Manuals
- Commissioning & Installer Logs
- Existing Pipework Schematics & Designs
- Facilities Managers and Maintenance Records
- User/Operative Information and Feedback
- Identifying Essential, Desirable & Optional Records

Module 8 – Inspection Checklists & Common Faults

- Utilising Checklists
- Typical AC System Fault Recognition
- Design & Installation Faults
- Operational Faults by the User
- Control Faults
- Preparing the Report
- Observations, Recommendations, Advice & Improvements
- Issuing the Report
- Software & Accreditation