



THE INSTITUTION OF FIRE ENGINEERS
FOUNDED 1918 • INCORPORATED 1924

**IFE LEVEL 3 DIPLOMA:
FIRE SCIENCE OPERATIONS AND SAFETY 500/5923/3;
FIRE SCIENCE AND FIRE SERVICE OPERATIONS 500/6215/3;
OR FIRE SCIENCE AND FIRE SAFETY 500/6216/5.**

(FORMERLY KNOWN AS THE GRADUATE SYLLABUS.)

The IFE Level 3 Diploma (Graduate) Syllabus has been prepared as a series of objectives with the intention that students can acquaint themselves satisfactorily with the required subject matter. It is intended to be a **guide** to your study plan. You should be aware that questions may be included in examinations from time to time which may not arise directly from this syllabus but which will reflect current thinking and new developments in Fire Engineering.

Details of the IFE Level 3 Diploma qualifications in Fire Science / Operations / Safety can be found at:-

<http://www accredited qualifications.org.uk/awardingbody/qualifications/The+Institution+of+Fire+Engineers+qualifications.seo.aspx>

Note: The IFE examination syllabuses are progressive and candidates are reminded that the IFE Level 3 Diploma (Graduate) Examinations will have regard to the knowledge contained within the former Preliminary and Intermediate syllabuses.

The guide to the study materials required for the examinations in this syllabus is contained in the reading list published on the Institution's website.

Candidates are required within five examination years to obtain a pass in **four** papers, one **mandatory** and three **optional** to make up the desired combination.

Paper 1: Fire Safety (Optional). Accredited Unit H/502/3113.

1. Building construction

- 1.1 Interpret plans of building and recognise graphical symbols used for fire protection drawings
- 1.2 Detail the use to which the following building materials are put and comment on their behaviour in fire:-
 - a) Timber
 - b) Stone
 - c) Brick
 - d) Cement
 - e) Concrete (reinforced and pre stressed)
 - f) Metals
 - g) Glass
 - h) Building boards and building slabs
 - i) Insulating materials
 - j) Paint
 - k) Plastics
 - l) Sandwich panels

- 1.3 Define the following elements of structure, state their function and comment on their fire resistance:-
- a) Columns
 - b) Beams
 - c) Walls
 - d) Floor
 - e) Roofs
 - f) Non load bearing walls and partitions
 - g) Stairways
 - h) Doors
 - i) Windows
 - j) Roof lights
 - k) Ceilings
 - l) Sandwich boards
- 1.4 Describe the various types of heating, ventilation and air conditioning systems that are used in buildings and comment on the effects they may have on a fire and the fire suppression methods used in these systems.
- 1.5 Describe the methods of servicing buildings with electricity, gas, water, lifts and escalators
- 1.6 Describe the requirements and principles of:-
- a) Separating walls
 - b) Compartment walls and floor
 - c) Junctions formed by elements of structure
 - d) Protected shafts and protecting structures
 - e) Fire resisting doors and other enclosures
 - f) Space separation

2. Fire protection equipment

- 2.1 Outline the design features, installation, use, maintenance and operations of the following types of fixed installations
- a) Sprinkler systems
 - b) Drencher and Water Spray Projector Systems
 - c) Rising mains
 - d) Hose reels
 - e) Foam systems
 - f) Gas/Vapour Systems
 - g) Dry Powder Systems
 - h) Fire Detection Systems – Smoke, Heat and Flame
 - i) Electrically Operated Fire Alarm Systems – manual and automatic
- 2.2 Outline the use, siting and maintenance of portable fire extinguishers and extinguishing equipment

3. Fire safety practice

- 3.1 Describe the principles of means of escape in case of fire
- 3.2 State the principles of evacuation procedures that should be adopted in case of fire
- 3.3 Describe the use, siting and contents of fire notices
- 3.4 Outline methods of improving public fire safety
- 3.5 Define the basic principles that apply to the installation of:-
- a) Emergency lighting system
 - b) Fire venting systems

- 3.6 Students need to have detailed knowledge of the statutory responsibilities for fire precautions which may exist for any of the following classes of premises where they live. Some countries have adopted a process of risk management, others have a certification system: either is acceptable.

Where appropriate these responsibilities will include reference to structural matters, means of escape, fire detection, fire alarms, fire fighting equipment and fire routine.

The relevant statute should be quoted wherever possible.

- a) Commercial office premises
- b) Retail premises
- c) Factories and other places of manual work
- d) Places of public entertainment, including cinemas, theatres, dance halls and premises used only occasionally for these purposes
- e) Premises where alcoholic liquor is consumed
- f) Hotels and other relevant premises

4. Fire investigation

- 4.1 Discuss the effects of structures, occupancy and contents on a fire and state their significance to fire investigators
- 4.2 Demonstrate an understanding of how fire fighting operations may affect fire investigations
- 4.3 Outline the principal methods of gathering and recording information on the cause of fire including:-
 - a) Taking of notes
 - b) Use of tape recorders
 - c) Photography
 - d) Visual recording systems
 - e) Plans and drawings
 - f) Interviewing witnesses
 - g) Excavation of site
- 4.4 Discuss the methods used to locate the seat of the fire including:-
 - a) Physical signs illustrating the general location of the point of origin
 - b) Indirect methods of locating the seat
 - c) Apparent seats of fire
- 4.5 Explain the use of the following as deductive evidence at fire scenes:-
 - a) Evidence from glass
 - b) Evidence from smoke records
 - c) Evidence from instrument marks
 - d) Evidence from footwear impressions
 - e) Vehicle evidence
 - f) Trace evidence
- 4.6 State the fundamental principles of fire investigation where a person dies as a result of fire including:-
 - a) Identification of the deceased
 - b) When and how the deceased died
- 4.7 Outline the possible causes of ignition and problems from the misuse and malfunctions of heating, cooking and lighting equipment
- 4.8 Explain the characteristics of fires with different origins, i.e.
 - a) Slow fires
 - b) Rapidly developing fires
 - c) Accidental fires from different causes

- 4.9 Outline the reasons for suspecting arson from the general characteristics of a fire and at or after the scene of investigation

Paper 2a: Fire Service Operations - International (Optional). Accredited Unit F/502/3118.

1. Firefighting techniques

In relation to general operations:-

- 1.1 Command and Control
- a) Discuss the purpose of pre planning for any specified emergency
 - b) Explain the value of specific command references for officers, including Sector Command procedures
 - c) Detail all types of fireground communications systems
 - d) Describe principles for general control, fireground tactics and fireground strategy
 - e) Explain the need for evacuation at fires
 - f) Outline the strategy and tactics involved in rescue work
 - g) Explain the objectives of ventilation at fires
 - h) Describe the aims and principles of salvage/damage control
- 1.2 Fire development and extinguishment, including:-
- a) Methods of identifying different types of burning materials
 - b) Various ways in which fire can spread within buildings and between buildings
 - c) Explain in detail the principles, application and benefits of ventilation, including Positive Pressure Ventilation
- 1.3 Fireground Safety.
- a) Discuss the value of safety organisation at incidents and the duties that may be assigned to Safety Officers
 - b) Describe in detail, in relation to specific risks, the various methods of attack, hazards to the environment and persons present, and appropriate practical procedures when attending incidents involving:-
 - i. Domestic and other life risk accommodation, including houses in multiple occupations
 - ii. All types of Transportation Premises and Systems including underground and funicular rail systems
 - iii. Specific Risk Premises and Materials including:-
 - Radioactive materials in premises or vehicles
 - Agriculture and rural buildings and silos
 - iv. Industrial premises:-
 - Plant using metals and metallic powders
 - Plant using /evolving toxic gases, including ammonia and chloride
 - Plant producing and using chemicals
- 1.4 Describe in detail, in relation to incidents which do not necessarily involve fires (often referred to as Special Services) the principal hazards, methods of protecting persons and the environment and practical procedures to return effectively to a safe situation at all incidents including those involving:-
- a) Natural disasters resulting in flooding or building collapse
 - b) Underground pipelines conveying hazardous substances

2. Mobilisation and communication

- 2.1 Detail methods of summoning personnel and transmitting call information and instructions to:-

- a) Fire stations
 - b) Individuals at locations other than fire stations
 - c) Mobile fire appliances
- 2.2 Describe equipment used and operating principles of brigade control rooms including the use of computer aided mobilising systems
- 2.3 Describe the radio systems using VHF, UHF and digital workings, and discuss their use both on and off the fireground

3. Pumps and primers

- 3.1 Describe in detail centrifugal and peripheral pumps including high-pressure pumps and state their advantages and disadvantages
- 3.2 Describe ejector pumps and state their areas of application within the Fire Service, together with their advantages and disadvantages
- 3.3 Define the following terms:-
- a) Duty point
 - b) Volute
 - c) Multi stage
 - d) Guide vanes
 - e) Cavitation
- 3.4 State the purpose and operation of anti-surge devices on high pressure hose reel tubing
- 3.5 Explain in detail direct and indirect cooling systems and state the advantages and disadvantages of both systems
- 3.6 Describe a typical hose reel system with the main pump feeding the hose reels at high or low pressure
- 3.7 Describe in detail the symptoms of faults that may occur:-
- a) When working from pressure-fed supply
 - b) When working from open water
- 3.8 State the principles to be observed when controlling pump output where branchmen are involved, and the benefits and disadvantages of automatic pump controls
- 3.9 Describe the maintenance and servicing of pumps that should occur on returning from fire

4. Fire service vehicles

- Demonstrate an understanding of the principal components, operations and functions of vehicles used by the fire and rescue services for fire fighting or special incident work undertaken by them. (**Note:** The term 'vehicles' includes container style vehicles, such as PODS and demountables, which may have one prime mover but a number of containers.)
Be able to specify the features of all types of fire and rescue vehicles, including the following:-
- 4.1 A pump appliance having an integral pump working from a power take off driven by the road engine and designed to carry a crew of personnel with additional equipment including ladders, a water tank and hose reels
- 4.2 Aerial apparatus including turntable ladders and hydraulic platforms
- 4.3 Emergency rescue tenders designed to carry a comprehensive range of rescue equipment and special appliances for rough terrain
- 4.4 Rapid intervention vehicles used at airfields and within brigades for fire fighting and rescue
- 4.5 Vehicles used to convey water and foam concentrate in bulk to the fireground
- 4.6 Vehicles use at chemical incidents including those used to decontaminate personnel

- 4.7 Vehicles used to assist in fireground control and command
- 4.8 Vehicles used to convey salvage equipment
- 4.9 Vehicles used to lay hose to incidents whilst the vehicle is being driven
- 4.10 Recovery vehicles designed to help recover other vehicles that may have broken down or are unable to move

5. Equipment

5.1 Hose

Describe in detail the performance requirements and the construction of the various types of hose

5.2 Ropes

- a) Discuss in detail the comparison between natural, man made and wire ropes
- b) Describe in detail the construction of such ropes.
- c) Describe a turntable rescue line, a lowering line, a long line and a short line and explain the usage of each
- d) Describe methods of obtaining mechanical advantage when using lines with blocks and tackle
- e) Line rescue capability

5.3 Foam and foam making equipment

- a) Detail the different properties of the various foams and foam concentrates
- b) Classify problems by expansion and by constituents (low medium high)
- c) State the conditions under which foam concentrates should be stored
- d) Name the types of equipment required to produce foam
- e) Specify the care and maintenance of foam making equipment
- f) Describe the application rates of foam and factors to be taken into account when using foam to extinguish a fire
- g) State what is meant by 'pressurised foam supply'

5.4 Ladders

- a) Specify the safety precautions to be observed when handling/pitching/climbing ladders
- b) Detail in depth the principles of working with ladders

5.5 Breathing apparatus and associated equipment

- a) Describe the principal component parts and the passage of air from the cylinder at high pressure to the wearer in a specific type of compressed air apparatus
- b) Describe one type of Breathing Apparatus communications equipment
- c) Describe a safety procedure used to control the use of BA by up to 12 wearers
- d) Describe methods of testing a specific type of apparatus
- e) Describe in detail a typical hand operated resuscitation apparatus and typical automatic resuscitator

5.6 Hydraulic rescue equipment, cutting gear and other rescue apparatus

- a) Describe the construction and operating principles of compressed air power tools, electric power tools and flame cutting equipment
- b) Name the items in a typical hydraulic rescue kit and state the operating instructions and general maintenance applicable to the equipment
- c) Describe the operation of hauling and lifting equipment

5.7 Lighting equipment

Explain in detail the term 'Intrinsically Safe'

5.8 Chemical protective clothing

Describe the principles of clothing design to give total environmental protection by being 'gas tight', or limited protection against splashing by harmful chemicals. Show an understanding of the testing and maintenance procedures to be adopted for such items

5.9 Radiation equipment

Describe in detail the type of equipment used in relation to radiation incidents

6. Water supplies

State the precautions to be observed when using a high pressure hydrant

7. Risk assessment

Discuss the principles of a 'Risk Assessment' based approach to planning operational fire cover

Paper 2c: Aero Fire Studies (Optional). Accredited Unit T/502/3116.

1. Provision for fire-fighting and rescue facilities at airports and airfields

- 1.1 Discuss the categorisation of airports in relation to the fire fighting protection to be provided
- 1.2 Detail the provision of principal and complementary extinguishing media and describe their characteristics
- 1.3 Outline the discharge rates for extinguishing agents
- 1.4 Discuss the provisions of rescue and fire-fighting vehicles and detail their response times and specifications
- 1.5 Explain in detail the meaning of the term 'critical area concept'
- 1.6 Discuss the provision of water supplies at airports and airfields

2. Fire protection of airport buildings

- 2.1 Describe the use, construction features and classification of aircraft hangars
- 2.2 Describe the principles of hangar separation
- 2.3 Detail the fire protection measures that should be recommended for different groups of hangars
- 2.4 Explain the basic layout of airport terminal buildings
- 2.5 Discuss the fire protection measures that should be recommended for airport terminal buildings

3. Aircraft construction

- 3.1 Detail the materials normally used in aircraft construction
- 3.2 Outline the features of aircraft construction
- 3.3 Describe the features of power systems and services
- 3.4 Describe the features of internal fixtures and fittings
- 3.5 Discuss in detail the aircraft access and evacuation systems
- 3.6 Classify passenger emergency exits in terms of type, size and location and be able to determine the number and type of exits to be provided for each side of an aircraft according to passenger carrying capacity
- 3.7 Discuss the provision of fixed fire protection systems in aircraft

- 3.8 Describe the various engines used in aircraft and outline their hazards
- 3.9 Discuss the types of aviation fuels that are used and outline their characteristics
- 3.10 Describe the construction details of rotary wing aircraft
- 3.11 Categorise the different types of helicopter
- 3.12 Discuss access and escape routes provided in rotary wing aircraft
- 3.13 Describe the position of engines and the general features of rotor blades
- 3.14 Describe the provision of fuel tanks in military aircraft
- 3.15 Discuss the types of fuel used in military aircraft
- 3.16 Describe the access to and exits from military aircraft including cockpit canopies, break-in points and emergency hatches
- 3.17 Outline the types of power systems and services that may be found in military systems
- 3.18 Outline the three types of storage of armaments and pyrotechnics found on board military aircraft

4. Emergency planning and procedures

- 4.1 Explain the use of maps, rendezvous points, standby points and the involvement of interested organisations in pre-planning
- 4.2 Detail the categorisation of emergencies at airports and define these terms:-
 - a) Aircraft accident
 - b) Full emergency
 - c) Local standby
 - d) Bomb alert/bomb suspected
 - e) Domestic fire
- 4.3 Discuss the pre-determined attendance and the role of the local authority fire services
- 4.4 Discuss the following features that are useful for planning procedures:-
 - a) Observation and watching duties
 - b) Determining the best position for standby for emergency vehicles

5. Aircraft fire-fighting procedures and techniques

- 5.1 Discuss in detail the types and causes of aircraft ground incidents and fires that can be encountered and the methods of dealing with them including:-
 - a) Fuselage and passenger cabin fires
 - b) Wheel fires and hot brakes
 - c) Engine fires
 - d) Running fuel fires
 - e) Metal fires
- 5.2 Discuss the methods of dealing with aircraft fuel spillage with and without a fire occurring
- 5.3 Discuss the fire tactics and techniques that need to be adopted for attending incidents at airports for the following:-
 - a) Approaching the incident
 - b) Appliance positioning
 - c) Application of extinguishing agents
 - d) Use of additional water supplies and extinguishing agents
 - e) Locating the incident
 - f) Casualty handling

- 5.4 Define the meaning of “high speed accident” and “low speed accident”, and describe in general terms the actions of the fire and rescue service at these types of incidents
- 5.5 Detail the procedure for foaming runways for emergency landings
- 5.6 Describe the methods used to foam runways
- 5.7 Discuss the advantages of foaming runways and outline the problems associated with this procedure

6. Rescue from aircraft

- 6.1 Describe the methods used to evacuate an aircraft by the flight crew
- 6.2 Describe the methods used to evacuate an aircraft by the fire service and rescue personnel
- 6.3 Detail the methods of entry that can be used to gain access to an aircraft
- 6.4 Discuss the principles of rescue procedures for rescue from civil aircraft
- 6.5 Detail the methods of entry used to gain access to military aircraft including access via cockpit canopies
- 6.6 Outline the dangers presented by ejection seats and the principles of making them safe
- 6.7 Describe the methods of release and rescue of aircrew

7. Post accident procedures

- 7.1 Discuss the movement of wreckage and the practice of de-fuelling
- 7.2 Discuss the need to decontaminate personnel and equipment
- 7.3 Describe methods of dealing with ignition sources and the evacuation of the surrounding area
- 7.4 Discuss the removal and collation of personal belongings
- 7.5 Discuss the removal and moving of bodies including the recording of position and locations

8. Heliports

- 8.1 Discuss the main factors that need to be considered in choosing a heliport site
- 8.2 Outline the points that need to be considered when determining the size of a heliport including the final approach and take-off areas
- 8.3 Discuss the levels of fire protection required for heliports
- 8.4 Outline the categorisation of heliports in relation to the provisions of fire protection facilities to be provided
- 8.5 Discuss the response times for fire and rescue personnel at both surface and elevated heliports

Paper 3: Fire Engineering Science (Mandatory). Accredited Unit D/502/3112.

1. Analysis and interpretation of data

- 1.1 Extract and tabulate given data and express that data in the form of:-
 - a) Graphs
 - b) Histograms and bar charts
 - c) Circular diagrams (pie charts)

1.2 Obtain median, mean and norm values from given data

1.3 Extend graphs to:-

- a) Project values from given data (extrapolate)
- b) Deduce values from missing data (interpolate)

2. Mechanics

2.1 Define the SI system of units in terms of basic and derived units

2.2 Describe and carry out simple calculations involving the equations of motion

2.3 Describe Newton's Laws of Motion

2.4 Use vector quantities to find resultant values

2.5 Apply vector methods to force and motion problems

2.6 Calculate moments around a fulcrum including the use of levers and parallel force

2.7 Carry out calculations involving centres of gravity and buoyancy

2.8 Define stress strain, describe Hooke's Law and carry out calculations involving these terms

2.9 Apply the calculations of work, power, density and efficiency to practical examples

2.10 Describe and calculate the friction force between two surfaces in contact

3. Hydraulics

3.1 Define the following terms and demonstrate the relationship between them:-

- a) Density
- b) Specific gravity
- c) Pressure in fluids

3.2 Solve problems involving the terms referred to in 3.1

3.3 Define "streamline flow"

3.4 Show how the principle of atmospheric pressure is used in pumping systems either as an aid to flow or as a means of measuring flow

3.5 Use the laws of friction to calculate energy losses in piped water supplies

3.6 In relation to pumps, define water power, brake power and efficiency. Carry out basic calculations involving these terms

3.7 Explain the relationship between velocity and discharge of water through hose of differing diameters

3.8 Discuss the purpose and design of branches and nozzles

3.9 Calculate the theoretical and the effective height of a jet

4. Electricity

4.1 Describe electric current as a flow of electrons

4.2 Describe how electrical energy is generated and distributed

4.3 Explain the characteristics of alternating and direct current

4.4 Describe the operation and characteristics of a step-up and step-down transformer

4.5 Explain Ohm's Law and calculate the relationship between resistance, amperage and voltage in simple circuits (parallel and series).

- 4.6 Use Ohm's Law to solve problems
- 4.7 Explain the magnetic and chemical effects of electrical currents and show how these phenomena are applied in:-
 - a) Electric motors
 - b) Primary and secondary electric cells
- 4.8 Describe the function and method of operation of fuses and circuit breakers
- 4.9 Define and solve problems involving resistance variation with temperature and resistivity
- 4.10 Apply the concept of power to electrical circuits

5. Heat

- 5.1 Define and calculate:-
 - a) Specific heat capacity
 - b) Latent heat of vaporisation
- 5.2 Apply the use of 5.1 to calculations involving the transfer of heat
- 5.3 Calculate linear, superficial and volumetric expansion using the relevant coefficients
- 5.4 Apply the Gas Laws to calculations involving changing conditions of heat

6. Radioactivity

- 6.1 Describe the principle of radioactivity
- 6.2 Explain the construction of alpha and beta particles and gamma radiation and compare their penetrating powers
- 6.3 Define the terms decay and half life
- 6.4 Describe the biological effects of radiation and precautions to be adopted for safety from the effects of radiation

7. Chemistry

- 7.1 Describe the construction of an atom and show how the electron shell configuration has an effect on reactivity
- 7.2 Explain the concept of valency and the relevance of the periodic classification of the elements
- 7.3 Apply the concept of valency to the formation of chemical compounds
- 7.4 Balance simple chemical equations and define stoichiometric conditions
- 7.5 Calculate relative molecular masses and vapour densities from given relative atomic masses
- 7.6 Use "balanced" chemical reactions for the calculation of the masses and the volumes, of reactants in chemical reactions
- 7.7 Demonstrate an understanding of the classifications of the chemical elements and the main hazards associated with each grouping
- 7.8 Demonstrate knowledge of the properties, reactions and hazards associated with elements defined as:-
 - a) Metals
 - b) Non-metals
- 7.9 Describe the main properties of the following compounds and elements:-
 - a) Acids (inorganic and organic)

- i. Ammonia
 - ii. Calcium oxide
- b) Alkalis
 - i. Ammonium hydroxide
 - ii. Carbon monoxide
 - iii. Carbon dioxide
 - iv. Chlorine
 - v. Hydrogen
 - vi. Oxygen
 - vii. Sodium
 - viii. Sulphur
 - ix. Phosgene
- 7.10 Define hydrocarbons
- 7.11 Describe the structure and main properties of the first four members of the alkane family
- 7.12 Define the terms flashpoint, fire point and spontaneous ignition temperatures
- 7.13 Describe the principles involved in the extinction of fire by smothering, cooling and oxygen starvation
- 7.14 Outline the principle of the fire “tetrahedron” and inhibition of combustion chains involving a “free radical” mechanism

Paper 4: Human Resource Management in Fire and Rescue Services - International (Optional). Accredited Unit A/502/3117.

1. Planning, control and review

- 1.1 Identify the responsibilities of a team leader in connection with the needs of customers and suppliers both internal and external to the organisation
- 1.2 Discuss the responsibilities of employee and employer in relation to health and safety at work
- 1.3 Describe planning methods for achieving productive results
- 1.4 Discuss leadership of individuals and team members and understand the different styles of command

2. Introduction to quality management

- 2.1 Outline the basic processes for the maintenance of quality assurance and control
- 2.2 Identify the team leader’s role in meeting organisations objectives and implementing policy
- 2.3 Understand the need for effective recording systems, staff reporting and simple budgetary control
- 2.4 Detail employee training and development systems

3. Use and control of resources

- 3.1 Describe the role of the team leader when using resources efficiently
- 3.2 Outline the concept of effective resource management
- 3.3 Describe the process of motivation
- 3.4 Discuss typical problems associated with delegation

3.5 Identify the human relationship between environment, personality and behaviour

3.6 Examine communication systems in resource control

4. Management and Self Development

4.1 Identify the need to manage personal and professional development and to build effective working relationships

4.2 Assess the effect of personal performance and style of working, taking into account the views of other relevant people

4.3 Draw up a specific, measurable and achievable action plan for self-development, which takes into account known priorities and personal resources

4.4 Examine individual jobs and set out a plan for effective time management

4.5 State the principles of good communication

4.6 Describe methods of maintaining confidentiality

4.7 Examine personal relationships with line managers, colleagues and team members

4.8 Describe a system for informing people of expected standards of work and behaviour

4.9 Describe formal and informal systems for handling conflict in organisation

5. Recruitment

5.1 Discuss the process of recruitment of people within the role of the team leader

5.2 Describe the legal requirements for recruiting and employing personnel

5.3 Describe a typical organisation system for identifying personnel requirements

5.4 Prepare a job description and personnel specification from given information

5.5 State the principles to be followed when recording information on all candidates involved in the selection process

6. Individual and team development

6.1 Describe how to make a significant contribution to development of teams and individuals, to ensure the best use of Human Resources in achieving team and organisational objectives

6.2 Identify different development needs

6.3 Outline how to influence people's response to identified needs

6.4 Discuss how to contribute to the planning of developmental activities

6.5 Explain how to monitor, review and provide feedback on individuals' development activities

6.6 Explain the ways on which work can be carried assessed. List the information that is needed to carry out the assessment

6.7 Outline how to produce a realistic and achievable work plan and communicate it to a team

6.8 Explain how to involve staff in the assessment process

7. Improving team performance

7.1 Identify typical problems likely to lead to poor work performance

7.2 Describe the range of support services available to a team member with a problem, which is affecting work performance

- 7.3 Outline the need for respect for a team member with whom poor work performance is being discussed
- 7.4 Detail the main steps which a disciplinary procedure should incorporate
- 7.5 Explain how to maintain confidentiality when dealing with a grievance

8. Information collection and analysis

- 8.1 Describe the need for a good sound knowledge of managing information efficiently within the role of a team leader
- 8.2 Discuss information collection and use to organisational effectiveness
- 8.3 Explain how to carry out an investigation requiring the collection and validation of information and takes account of resource availability
- 8.4 Explain the principles of confidentiality
- 8.5 Explain how feedback is used to check understanding
- 8.6 Evaluate the use of a meeting
- 8.7 Plan a meeting for a small group of people including:-
 - a) Its purpose and objective
 - b) Preparation required
 - c) Length and timing
 - d) Post meeting requirements

Paper 5: Fire Service Operations – UK Specific (Optional). Accredited Unit K/502/3114.

1. Firefighting Techniques

1.1 Incident Command.

- a) Discuss the purpose of pre-planning for any specified emergency
- b) Explain the value of specific command references for officers, including Sector Command procedures
- c) Explain a system for incident command
- d) Detail all types of fireground communications systems, especially a typical incident communication network incorporating feedback techniques.
- e) Describe principles for general control, fireground tactics and fireground strategy
- f) Explain the need for evacuation at fires
- g) Outline the strategy and tactics involved in rescue work
- h) Explain the objectives of ventilation at fires
- i) Describe the aims and principles of salvage/damage control

1.2 Fire Development and Extinguishment, including:-

- a) Methods of identifying different types of burning materials
- b) Various ways in which fire can spread within buildings and between buildings
- c) Explain in detail the principles, application and benefits of ventilation, including Positive Pressure Ventilation