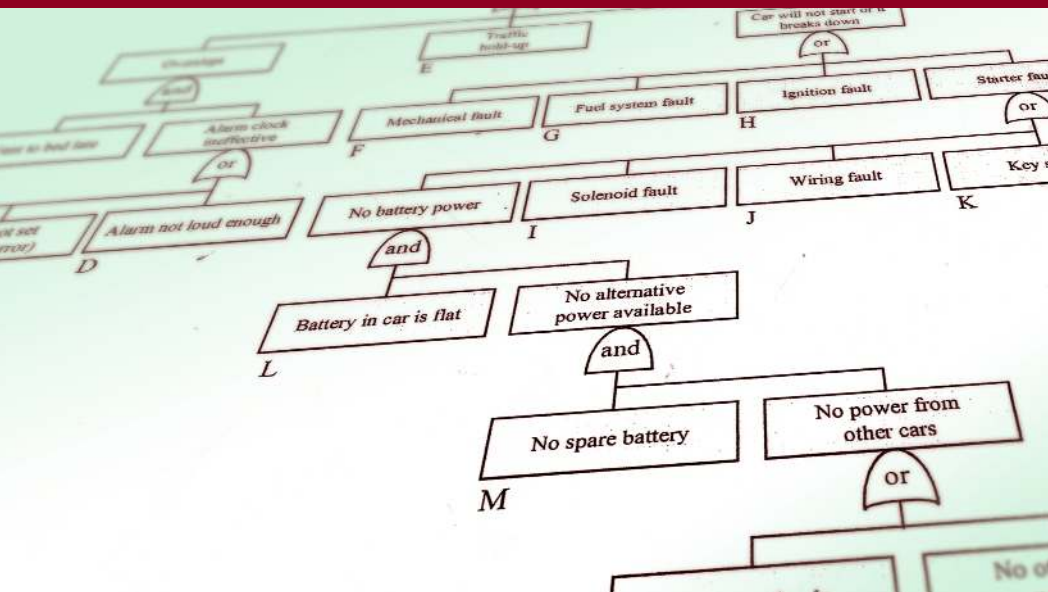
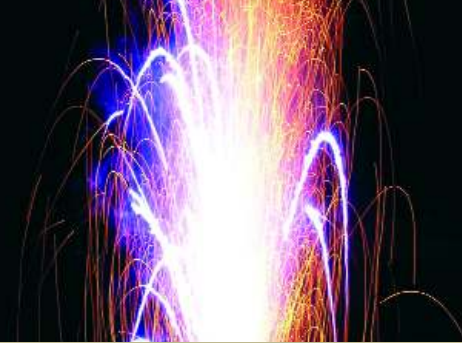


Introduction to Hazard Analysis & Risk Assessment



Course Content

- **Safety legislative framework in the UK**
- **Qualitative Risk Assessment (QRA)** — both manually and by use of specialist computer software demonstration
- **Process terminology** — common terminology and diagrams
- **Project life-cycle** — manage a project from the concept stage to the operating phase
- **Past incidents** — past incidents at chemical plants are studied so that lessons can be learnt
- **Safety Management Systems (SMS)** — Implement effective SMSs and the impact on risk assessment
- **Introduction to hazard identification** — checklists, Failure Mode Evaluation & Effects Analysis (FMEA), Structured What-If (SWIFT), risk matrix
- **HAZOP** — identifying hazardous or unacceptable situations and quantifying this situation
- **Fault Tree Analysis (FTA)** — used to describe how “basic events” combine to cause system failures or accidents
- **Event tree analysis** — identify and quantify possible outcomes from an event
- **Risk predictions** — how to make decisions based on risk predictions and how to present them
- **Average fatal risk**
- **F-N Curve**
- **Risk contours**
- **Fatal Accident Rate (FAR)**

Unit Code: Part of CPE 6001

The ability to fully understand all the hazards associated with the modern chemical/processing plant is vital. This course gives you an introduction to the tools needed for hazard analysis and risk assessment.

The module shows how to analyse hazards and how to carry out risk assessments. It examines ways for improving the safety of the plant at the process design stage.

You will learn about the techniques of hazard and operability study [HAZOP] and fault tree analysis [FTA] and about the way in which safety studies can be integrated within the design process.

