

## Unit 45: Setting Out Processes in Construction and Civil Engineering

Unit code: Y/600/022

QCF Level: 3

Credit value: 10

Guided learning hours: 60

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### Unit aim

The aim of the unit is to enable learners to gain a knowledge of setting out processes, carry out standard tasks involved in setting out and understand the emerging technologies used in setting out.

### Learning outcomes and assessment criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria determine the standard required to achieve the unit.

| Learning outcomes   | Assessment criteria   |
|---|---|
| 1 Be able to establish grids of levels over a site and use them to establish contours and carry out volume calculations | 1.1 Carry out fieldwork to establish grids of levels and contours over a site                             |
|   | 1.2 Carry out volume calculations   |
| 2 Be able to set out construction work in a plan to appropriate accuracies  | 2.1 Carry out fieldwork to set out construction work in a plan from coordinates to appropriate accuracies |
| 3 Be able to control the level and gradient of construction works   | 3.1 Carry out fieldwork to control level and gradient   |
| 4 Understand the uses and advantages of emerging technology in setting out  | 4.1 Discuss the emerging technologies in setting out processes  |

## Unit content

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### **1 Be able to establish grids of levels over a site and use them to establish contours and carry out volume calculations**

*Contours:* interpolated and calculated from spot heights

*Volumes:* simple calculations from grids of level

### **2 Be able to set out construction work in a plan to appropriate accuracies**

*Works:* buildings; manholes; road

### **3 Be able to control the level and gradient of construction works**

*Works:* drainage runs; first and second stage earthwork

### **4 Understand the uses and advantages of emerging technology in setting out**

*Emerging technology:* lasers; Global Positioning System (GPS); digital levels; machine guidance; automated total station