



## Processing courses

### Training for Quarry Professionals

32 hours - Online  
Bite size learning  
Flexible, self paced



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For further information or to book your place  
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# Processing courses

## Introduction

Processing is the series of procedures used to alter raw materials while producing items. This bundle will enhance your knowledge of the different types of processing in construction by covering the Fundamentals of mineral processing, Washing and primary separation, Hydraulic classification, Continuous improvement, Beneficiation, Feeders, Screening, Mobile crushing and Crushing.



Funding  
Available

## Target Audience

Operatives, Foremen, Technicians,  
Supervisors, Managers.

## Course Delivery

32 hours - Online on Moodle

Bite-sized learning chunks (videos and  
Interactive quizzes)

Self paced /Self directed learning.

## Certification

CPD accredited programmes.

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# Crushing | 5 hours

## Course Overview

This course is an introduction to all different types of crushers, their usage, installation and maintenance.

## Course Content

1. Classification of Crusher
2. Compression crushers
3. Jaw crushers
4. Gyratory crushers
5. Roll Type crushers
6. Impact crushers
7. Vertical Shaft Impactors
8. Selection of a Primary Crusher
9. Health, Safety & Environmental Issues associated with crusher installation.

## Learning Outcomes

Learners will have a better understanding of crushing theory and technology types, health, safety and environmental issues, comparison of impact and compression primary crushers and jaw, impact and cone crushers.



# Mobile Crushing | 3 hours

## Course Overview

Mobile crushers are conveniently transportable, track-mounted rock crushing equipment for use on and between industrial sites. While a mobile screening machine aids in the sorting process and often includes conveyors and screens. This course is divided in 2 Parts helping you learn how to utilize them both to their fullest potential.

## Part 1 - Mobile Crushing

1. Crushing Stages
2. Classification
3. Jaw Crushers - Single Toggle
4. Gyratory
5. Cone Crusher
6. Impact Crushers
7. Wear Parts Selection
8. Vertical Shaft Impactors
9. Selection of Crushers
10. Additional Factors Influencing the Selection and Sizing of Crushers
11. Explanation
12. Safe Operation of Mobile crushing and Screening Plant (HSE guidance)
13. Blocked Crushers (Causes)
14. Preventing Blocked Crushers (Best Practises)

### Learning Outcomes

Attendees will gain a greater understanding of mobile crushing usage : essential knowledge, prevention and settings.

## Part 2 - Mobile Screening

1. Screening Surfaces
2. Types of Screen
3. Screen Selection
4. Screen Parameters
5. Environmental Impacts
6. What Happens to Construction Waste?

### Learning Outcomes

Attendees will gain a greater understanding of mobile screening usage : essential knowledge, prevention and settings.

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# Screening | 4 hours

## Course Overview

Screening is the process by means of which material is graded according to size, that is, the minimum cross-section. This course provides a comprehensive overview of screening from theory to practice.

## Course Content

1. Screening Theory
2. Screening Efficiency
3. Screen Capacity
4. Capacity and Efficiency
5. Screening Surfaces
  6. Perforated Plate
  7. Woven Wire Screen Cloth
  8. Parallel Rods and Wires
  9. Synthetics Screen Surfaces
10. Types of Screen
11. Health, Safety and Environmental Issues Associated with Screen Installations

## Learning Outcomes

Participants will have increased knowledge on the following areas :  
different types of screen, arrangement of vibrating screens in process plant and health, safety and environmental issues associated with screening installations.



# Feeders | 2 hours

## Course Overview

This course will give you more information about some of the types of primary feeders used in hard rock quarries.

## Course Content

1. Apron Feeders
2. Other Primary Feeders
3. Vibrating Feeders
4. Vibrating Motors
5. Mechanical Vibrators
6. Belt Feeders
7. Incorporation of Feeders

## Learning Outcomes

Attendees will learn more about plate, apron, reciprocating feeders and all types of vibrating feeders.

# Hydraulic Classification | 4 hours

## Course Overview

This course will give you a better understanding the classification of the particles during hydraulic classification using force of gravity and using centrifugal forces

## Course Content

1. Notes on Gravity Separation
2. Conditions of Settling
3. Principle of Operation of Gravity Classification Equipment
4. Types of Classification Equipment
5. The Construction and Operation of Gravitational types
6. Separation Using Centrifugal Force
7. Accurate Hydraulic Classification
8. Dewatering
9. Plant Layout
0. Summary of Treatment Systems
11. Effluent Disposal

## Learning Outcomes

Participants will get a sense of the theory of hydraulic classification and the application of the classifiers. They will also learn more about the two different types of particle classification during the hydraulic process which is the classification using the force of gravity and gravitational force.

# Beneficiation | 3 hours

## Course Overview

This course will enable you to understand the beneficiation processes through two elements "gravity separation" and "froth flotation".

## Course Content

1. Introduction
2. Gravity Separation
3. Froth Flotation

## Learning Outcomes

Learners will have an enhanced understanding of gravity separation and froth flotation: methods used to prepare coal, glass sand production and the processing of fluorspar.

# Washing and Primary Separation | 3 hours

## Course Overview

This course is an overview of washing and primary separation, deleterious materials, techniques and equipment involved.

## Course Content

1. Contamination of Material
2. Washing Screens
3. Rotary Washers
4. Log Washers
5. Sand and Gravel Layout

## Learning Outcomes

Participants will be aware that cleaning serves several purposes : it removes unwanted material so that the product is made acceptable, it may upgrade a product allowing it to command a higher price and it may re-claim a product from waste material.





# Fundamentals of mineral processing | 3 hours

## Course Overview

This course provides knowledge of the materials for construction present in the extractive sites and an appreciation of how they have been modified by regional, often continental scale, geological processes.

## Course Content

1. Terms commonly used within the minerals industry
2. The concept of the state of liberation of minerals
3. Principles of mineral separation
4. Chemical analysis
5. Particle size
6. The Partition curve.

## Learning Outcomes

Attendees will gain an enhanced knowledge of rock types and minerals.

# Continuous Improvement | 5 hours

## Course Overview

The course will teach you the principles of continuous improvement and how to implement it in your company.

## Course Content

1. The Purpose
2. What is Continuous Improvement?
3. The History of Continuous Improvement
4. What is the benefit of Continuous Improvement?
5. Where in the business can Continuous Improvement apply?
6. Systems
7. Tools

## Learning Outcomes

Learners will have a better understanding of the benefit and the tools of continuous improvement for businesses.



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 FUTURE CAST

**IQ**  
The Institute  
of Quarrying