

MINERAL RESOURCES INSTITUTE DEPARTMENT OF MINING AND MINERAL PROCESSING ENGINEERING



SHORT COURSES ANNOUNCEMENT

1. FUNDAMENTALS OF PRODUCTION DRILLING

Aim

The course is designed to instruct drilling personnel in the theoretical and practical aspects of fundamental drilling practices.

COURSE OBJECTIVES

The objectives of the course will enable drilling personnel to perform their duties in a manner which ensures safety to personnel, the public, the environment and equipment. It will provide the trainee with sufficient drilling skills to work under minimum supervision at a fundamental level. It will also enable the trainee to solve day to day problems such as basic engineering calculations, equipment selection, operation and maintenance.

Course Description

The course is structured in two major components: Theoretical and practical. Theoretical component will consist of the following modules.

- Introduction and history of drilling
- Uses of drilling
- Terminology
- Drilling methods
- Equipment selection
- Removal of Cuttings
- Rotation percussion and combination of both
- Drilling parameters/cost control
- Drillability
- Hole Control
- Drilling fluids and additives
- Drilling Patterns

Practical component will be instructed by a trained field supervisor, covering the practicalities, and in parallel with the topics covered in the theoretical component.

During the training period, the trainee will demonstrate the following:-

- Safe equipment handling.
- Environmental awareness.
- Appropriate behavior.
- Correct reporting procedures.
- Specified drilling skills.
- General work attitude.
- Maintenance skills.
- Problems solving.
- Equipment familiarization.
- Duty of care.

Course Contents

The course will comprise of the following contents: Introduction, History of drilling, uses of drilling, Terminology, drilling methods and results obtained, drillholes parameters, Removal of cutting, rotation, percussion and combination of both, drilling parameters, and cost control, drillability, Hole quality control, Drilling Patterns, maintenance.

Duration

Four weeks (4)

Admission Requirements

Applicants for the programme should possess the following basic requirements: -

- ◆ Minimum primary education able to speak and write in English/or Swahili
- ◆ Posses a valid mineral title (Claim holder) or working as a miner in small or large scale mining or intending to work in mining firms.
- ◆ Any person who has ability and capacity of conducting a course for the benefit of his/herself and the nation as a whole.

Assessment

Assessment will be based on assignments, tests, practical and end of course examination as stipulated in the curriculum.

Certificate And Awards

Certificate of competence will be awarded to participants who successfully complete the programme.

2. EXPLOSIVES AND BLASTING IN MINING WORKS

Focus.

The course will focus on providing participants with the basic knowledge on explosives, its handling and blasting techniques.

What will be achieved

At the end of the course participants should be able to: -

- ◆ Understand explosives and types of explosives
- ◆ Understand and apply the basic procedures in acquiring, transporting and storage of explosives
- ◆ Identify and usage of blasting accessories
- ◆ Understand theory, rules of blasting practice.
- ◆ Perform charging and firing of rounds
- ◆ Understand environmental problem associated with the above activities.
- ◆ Interpret Explosive Act 1963 and its Regulation 1964

Target group

The programme is intended for community responsible for implementation of mineral prospecting, production and supervision of various processes in mineral beneficiation. It is also valuable for legal claim holders with an intention to extend their knowledge in mine development and mineral processing.

Training Centres

Selection of training centers will be based on the presence of active mineral prospectors and miners in a given area. The course could also be conducted at the institute's premises.

Training methodology

Parallel to lectures, practical will form the largest part of the course. Group discussion and excursions will augment the understanding of the course.

Admission requirements

Applicants for the programme should possess the following basic requirements: -

- ◆ Minimum primary education able to speak and write in English/or Swahili
- ◆ Posses a valid mineral title (Claim holder) or working as a miner in small or large scale mining or intending to work in mining firms.
- ◆ Any person who has ability and capacity of conducting a course for the benefit of his/herself and the nation as a whole.

Awards

Certificate of compitance will be awarded to participants who successfully complete the programme.

Duration

Four weeks (4)

Course content

Explosives and blasting agents

- ◆ High explosives
- ◆ Comparative properties of commercial explosives
- ◆ Types of blasting explosives
- ◆ Acquisition, transportation, storage and use of explosives
- ◆ Blasting accessories
- ◆ Explosive act, 1964.

Blasting

- ◆ Theory and blasting patterns
- ◆ Techniques of blasting
- ◆ Effect of free faces in blasting
- ◆ Surface blasting
- ◆ Underground blasting
- ◆ Charging, stemming and firing of rounds
- ◆ Problem associated with blasting.

The proposed contents of the course include:-

Rock drilling

- ◆ Hammer drills
- ◆ Percussion drilling
- ◆ Forms of drill steel
- ◆ Bits

Duration

Four weeks (4) months

3. MINERAL MARKETING AND MINING ACT 2010.**Focus.**

The course will focus on providing participants with the basic knowledge on looking for minerals, mining techniques, the legal and regulatory procedures (the basic knowledge on the 1998 mining act and the corresponding regulations) and marketing.

Mineral Trading**What will be achieved**

At the end of the course participants should be able to: -

- ◆ Understand mineral markets and development of mineral sector
- ◆ Analyze and explain structure and characteristic of mineral markets.

- ◆ To carry out trading activities
- ◆ To understand official dealing in mineral trading.
- ◆ Understand environmental problem associated with the above activities.

The proposed contents of the course include: -

- ◆ mineral markets and development of mineral sector
- ◆ Structure and characteristic of mineral markets.
- ◆ trading activities
- ◆ Official dealing in mineral trading.

Mineral rights

What will be achieved

At the end of the course participants should be able to: -

- ◆ Understand concept of mineral rights property ownership
- ◆ Understand and comply with the mining act, regulations and other relevant statutory laws.
- ◆ Perform pegging and registering primary prospecting license and primary mining license.
- ◆ To understand role and services offered by government and the mineral division.

Target group

The programme is intended for community responsible for implementation of mineral prospecting, production and supervision of various processes in mineral beneficiation. It is also valuable for legal claim holders with an intention to extend their knowledge in mine development and mineral processing.

Training Centres

Selection of training centers will be based on the presence of active mineral prospectors and miners in a given area. The course could also be conducted at the institute's premises.

Training methodology

Parallel to lectures, practical will form the largest part of the course. Group discussion and excursions will augment the understanding of the course.

Admission requirements

Applicants for the programme should possess the following basic requirements: -

- ◆ Minimum primary education able to speak and write in English/or Swahili
- ◆ Posses a valid mineral title (Claim holder) or working or intended to work as a mineral broker or dealer.
- ◆ Any person who has ability and capacity of conducting a course for the benefit of his/herself and the nation as a whole.

Awards

Certificate of compitance will be awarded to participants who successfully complete the programme.

Duration

Four weeks (4)

Course content

The proposed contents of the course include:-

- ◆ concept of mineral rights property ownership
 - Understand the most important parts contained the mining act No. 5 of 1998
 - preliminary provisions
 - general principles of the act
 - administration
 - mineral rights
 - disputes
 - registration of mineral rights
 - miscellaneous
 - Repeal, savings transitions and temporary provisions
- ◆ Understanding and complying with the mining act, regulations and other relevant statutory laws.
 - Understand all types of mineral rights
 - Apply for mineral rights and licenses
 - Get possession of mineral rights and licenses
 - Maintain and transfer mineral rights
 - Deal and trade in minerals
- ◆ Perform pegging and registering primary prospecting license and primary mining license.
- ◆ To understand role and services offered by government and the mineral division

4. SAFETY AND HEALTH IN MINE WORKS.**Focus.**

The course will focus on providing participants with the basic knowledge on safety and health related to mining activities.

What will be achieved

Explain safety rules and regulations for underground and surface mines.

Identify personal protective equipment for underground and surface mines eg. Head protection, face protection, body protection, hand protection, respiratory protection, leg and foot protection

Course content

Define personal health and safety terms;
Hazards, accidents, disasters, incident, risk.
List and explain classes of accidents

- Due to motion of powered haulage
- Due to motion of the machinery
- Due to bursting of air hoses, air tanks
- Due to deterioration of manufacture explosives

Explain causes of mining industrial illness/diseases and their preventive measures

- Dust
- Gases, Oils, acids, and bases

List causes of unsafe practices

- Lack of knowledge
- Lack of job procedures
- Inadequate job skills

List principles for eliminating unsafe practices

List principles for eliminating unsafe conditions

Duration

Four weeks (4)

Certificate of compitance will be awarded to participants who successfully complete the programme.

5. MINE EQUIPMENT OPERATIONS AND MAINTENANCE.

Focus.

The course will focus on providing participants with the basic knowledge on operating and maintaining mine equipment for excavation and dumping. Eg Dump Trucks, Excavators, Loaders, Graders etc.

What will be achieved

Identify types of different mining equipment excavation and its maintainability eg Preventive and breakdown maintenance.

Describe procedures for dump truck and excavation equipment operations. Eg Manual, Traffic rules, e.t.c

Apply the procedures for mine equipment operations and maintenance.

Course content

- Define mine equipment maintenance terminologies
 - Area maintenance, back log maintenance, maintenance work order system, over haul, preventive maintenance, predictive maintenance, repair.

Explain the purpose of mine equipment maintenance.

- Identify types of equipment maintenance schedule
 - Routine maintenance schedule
 - Preventive maintenance schedule

- Schedule routine maintenance

Duration

Four weeks (4)

Admission requirements

Applicants for the programme should possess the following basic requirements: -

- ◆ Minimum primary education able to speak and write in English/or Swahili
- ◆ Working as a miner in small or large scale mining or intending to work in mining firms.
- ◆ Any person who has ability and capacity of conducting a course for the benefit of his/herself and the nation as a whole.

6. ENTREPRENEURSHIP AND DEVELOPMENT SKILLS FOR ASM.**Focus.**

The course will focus on providing participants with the basic knowledge on doing and looking for business opportunities around their environment, business supports and to write project proposal for financial assistance.

What will be Achieved

- Ability to identify business opportunity
- Ability to identify financial and business support institutions
- Ability to write project proposal
- Ability to understand key facts on HIV/AIDS
- Ability to implement preventive measures of the transmitted diseases
- Ability to understand effects of AIDS in relation to business implementation.

Learning Context

This module will be conducted through lectures, group discussions, guest speakers, case studies, visit enterprises

Course Contents:

- Rationale and role of entrepreneurship in national economic development: Meaning of entrepreneurship, Rationale of entrepreneurship. The role of entrepreneurship in economic development in Tanzania. Enabling environment for entrepreneurship, dimensions of gender segregation in entrepreneurship, Tanzania government policy on enterprise development
- Entrepreneurial characteristics and motivation: The characteristics of an entrepreneur, entrepreneurial motivation.
- Business ideas and marketing: Generation of business ideas, business ideas validation.

- **National Strategies to Effect Better Control of Sexual Transmitted Diseases for Socio-economic Development**
 - Theoretical perspectives of Reproductive Health and Related Services, Sexually transmitted diseases (HIV/AIDS).
 - Ways of controlling the spread of sexual transmitted diseases in order to promote socio-economic development.
 - Challenges faced by government in the implementation of the control of the spread of sexually transmitted diseases.

Learning Materials:

This course will be taught through using textbooks, manuals, handouts and laboratory equipment.

Duration

Four weeks (4)

Certificate of competence will be awarded to participants who successfully complete the programme.

7. SAFETY AND HEALTH IN MINING WORKS

Course contents

- Safety rules and regulations in mine and civil work
- Health aspects and classes of accidents in mine and civil work
- Principles used for accidents prevention in mine and civil work
- Procedures for hazard identification in mines
- Safety gears for carrying out mine work
- Working environment for using safety resources in mine work
- Use safety gears for mine work
- Sources and classes of fire in mine work
- Methods of fire fighting in mine work
- Environments that causes explosion and spontaneous heating in mines
- Fire fighting equipment in mine work
- Mine rescue and first aid procedures
- Environment for using mine rescue equipment and first aid tools
- Mine rescue equipment and first aid tools for rescuing mine workers

Learning Materials:

This course will be taught through using textbooks, manuals, handouts and laboratory equipment.

Duration

Four weeks (4)

Certificate of competence will be awarded to participants who successfully complete the programme.

Head of Research and Short Course

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