



# MACHAKOS UNIVERSITY

University Examinations for 2018/2019 Academic Year

SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT

DEPARTMENT OF ENVIRONMENTAL SCIENCES

FOURTH YEAR SPECIAL/SUPPLEMENTARY EXAMINATION FOR

BACHELOR IN ENVIRONMENTAL SCIENCES

ENS 454: MINING AND SUSTAINABLE DEVELOPMENT

DATE: 22/7/2019

TIME: 8.30-10.30 AM

---

## INSTRUCTIONS:

Answer question **ONE** and any other **TWO** questions

### QUESTION ONE (30 MARKS)

- a) Discuss the roles that mining plays in realizing any one sustainable development goal  
(10 marks)
- b) Briefly discuss any **FIVE** strategies to protect water resources from the adverse impacts of mining activities and operations  
(10 marks)
- c) Highlight **FIVE** ways in which a community can participate in the planning of mined areas  
(10 marks)

### QUESTION TWO (20 MARKS)

Using named mining project, discuss any **FOUR** adverse environmental impacts of Acid Rock Drainage and indicate how to manage the impacts

### QUESTION THREE (20 MARKS)

Discuss the need for and the steps you will follow to develop an effective monitoring programme for various mining activities in an area

**QUESTION FOUR (20 MARKS)**

Suppose you have been appointed to oversee the development a strategy to manage various adverse impacts of mining in your County, discuss how to undertake the assignment and highlight any likely challenges you will face

**QUESTION FIVE (20 MARKS)**

Discuss the steps you will follow in establishing a mechanism to deal with health and safety issues associated with mining activities and operations in Kenya