

**UNIVERSITY OF SWAZILAND
Faculty of Health Sciences**

DEGREE IN ENVIRONMENTAL HEALTH

FINALEXAMINATION PAPER 2011

TITLE OF PAPER : WATER RESOURCES MANAGEMENT I

COURSE CODE : EHS 580

DURATION : 2 HOURS

MARKS : 100

INSTRUCTIONS : READ THE QUESTIONS & INSTRUCTIONS CAREFULLY

: ANSWER ANY FOUR QUESTIONS

: EACH QUESTION CARRIES 25 MARKS

: WRITE NEATLY & CLEARLY

: NO PAPER SHOULD BE BROUGHT INTO NOR OUT OF THE EXAMINATION ROOM

: BEGIN EACH QUESTION ON A SEPARATE SHEET OF PAPER

DO NOT OPEN THIS QUESTION PAPER UNTIL PERMISSION IS GRANTED BY THE INVIGILATOR.

QUESTION ONE

1. What are the crosscutting issues in integrated water resources management? (5 marks)
2. Describe the components of the five dimensions of integrated water resources management? (10 marks)
3. What does sustainable use of water resources mean? (5 marks)
4. List five factors that contribute to unsustainable water resources development. (5 marks)

QUESTION TWO

1. What are the components of a robust plan and what are the advantages of cyclic planning method over linear planning? (10 marks)
2. Give an estimate of the amount of “virtual” water that is equivalent with the production of 50kg of maize. If a ton of maize was exported to South Africa how much virtual water was exported? (10 marks)
3. Describe three consumptive uses and two non-consumptive water uses. (5 marks)

QUESTION THREE

1. Why do water Management Boards have to charge consumers for water use, yet this is a natural resources? (5 Marks)
2. What does closing a cycle mean in water resources management and of what advantage is cycle closing in water management? (10 Marks)
3. Describe an example where water resources management cycles is closed. (10 Marks)

QUESTION FOUR

1. What makes water an important resource above all other natural resources? (**Give five reasons**). (5 Marks)
2. Give five factors that contribute to global water shortage. (5 marks)
3. Global water shortage is a recipe for international conflicts. Given an opportunity to work towards harmonizing different interest for the world water uses, what will you do to avoid international conflicts? (10 marks)
5. Mention five demand-oriented measures in water resources management. (5 marks)

QUESTION FIVE

1. In about a paragraph explain the role of the following in water resources management.
 - a. Water engineers (5 Marks)
 - b. Lawyers (5 Marks)
 - c. Ecologists (5 Marks)
 - d. Economists (5 Marks)
 - e. Environmental Health Officers (5 Marks)