



# **GWANDA STATE UNIVERSITY**

**FACULTY OF ENGINEERING AND ENVIRONMENT**

**DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL SCIENCE**

**HYDROLOGY**

**NGE 2103**

**Final Examination Paper**

**November 2024**

This examination paper consists of 2 pages.

**Time Allowed: 3 hours**

**Examiner's Name: Mr. Magenge**

## **INSTRUCTIONS**

1. Answer any FOUR questions
2. Each question carries 25 marks.
3. Credit will be given to answers that are clear, illustrated, concise, and grammatically well-constructed.

1. Discuss the fundamental principles of hydrology and their applications in understanding the movement, distribution, and quality of water on Earth. [25]
2. Analyse key dimensions in water resources development and management. [25]
- 3a. Discuss the factors contributing to the occurrence of floods [12]
- b. Examine the impacts of flooding on human and the environment. [13]
4. Nuttle (2002) defines eco-hydrology as “the sub-discipline shared by the ecological and hydrologic sciences that concerns with the effects of hydrological processes on the distribution, structure and functioning of ecosystems, and on the effects of biotic processes on elements of the water cycle”. Elaborate? [25]
5. Define Integrated Water Resources Management (IWRM) and explain its principles. [ 25]
6. Propose innovative approaches or technologies for enhancing water conservation efforts in areas facing water scarcity. [25]

**THE END**