



**MASENO UNIVERSITY**  
**UNIVERSITY EXAMINATIONS 2013/2014**

**THIRD YEAR SECOND SEMESTER EXAMINATIONS FOR THE  
DEGREE OF BACHELOR OF SCIENCE IN EARTH SCIENCES WITH  
INFORMATION TECHNOLOGY  
(MAIN CAMPUS)**

**NGA 312: PHYSICAL AND CHEMICAL MONITORING OF  
WATER QUALITY**

*Date: 16<sup>th</sup> July 2014*

*Time: 2.30 - 4.30 p.m*

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**INSTRUCTIONS:**

- Answer Question ONE (1) and any other TWO (2) questions
- Illustrations should be used where appropriate



**NGA 312: PHYSICAL AND CHEMICAL MONITORING OF WATER QUALITY**

1. a) Explain the rationale of carrying out water quality monitoring. (6 marks)  
b) Examine the significance of residence time in water quality (6marks).  
c) Discuss the main limitations of conventional water sampling. (8 marks)  
d) Discuss the sampling procedures for:
  - i) Surface water (5marks)
  - ii) Groundwater (5marks)
2. a) Discuss the salient features of a water quality assurance program. (10 marks)  
b) Water quality varies in space and time. Discuss. (10 marks)
3. Examine hydrological features that influence water quality. (20 marks)
4. Explain the process of determining Dissolved Oxygen in the field using Winkler method. (20 marks)
5. a) Discuss key factors that influence selection of a sampling station. (8 Marks)  
b) Explain the significance of using a Water Quality Index in water monitoring study. (7 marks)  
c) Explore the role of water quality standards in the water quality management program. (5 marks)
6. Discuss the main factors for consideration when designing a water quality monitoring programme. (20 marks)