

COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE

PhD (36 months) & MASTERS (24months) STUDENT APPOINTMENT

CENTRE FOR WATER RESOURCES RESEARCH

SCHOOL OF AGRICULTURAL, EARTH AND ENVIRONMENTAL SCIENCES PIETERMARITZBURG

CAMPUS

Are you ready to make a significant impact in flood management? Are you passionate about developing innovative solutions to protect communities from the devastating effects of flooding? We have an extraordinary opportunity for you!

The Centre for Water Resources Research at the University of KwaZulu Natal is looking for a PhD and a master's student and be at the forefront of a ground-breaking research project: Development of an Operational Flood Monitoring System/ Flood Risk Information System.

About the project

Recently, there has been an increase in the frequency and intensity of extreme weather events and natural hazards such as floods worldwide. Developing countries are often the most vulnerable to extreme weather events as they generally need more resources and are ill-equipped to develop planning and management strategies to mitigate the negative impacts of extreme weather events. Flood early warning systems (FEWS) are critical tools that help prevent the loss of lives and damage to property caused by flooding. Funded by the Water Research Commission of South Africa, the study will aim to develop FEWS KwaZulu Natal. The study will utilise the cloud computing Google Earth Engine (GEE) platform due to its high-speed computational power requirements for processing remotely sensed data, and two models, hydrological & hydraulic, will be used to develop physical modelling components for water management areas (WMAs) or district municipalities (DMs). Project objectives include i) developing a FEWS through enhanced hydrological and hydraulic modelling in KwaZulu Natal in pre-determined flood-prone regions with the potential to upscale to the national scale, ii) reviewing, testing and calibrating the FEWS and applying the newly developed methodology to additional WMAs or District municipalities, and iii) to develop of user/training manuals of the FEWS as well as train users of WMAs or DMs on how to use the FEWS tool.

Minimum requirements:

For PhD:

- Master's degree in Hydrology, engineering or relevant field.
- Strong background in GIS, remote sensing, and cloud computing applications
- Knowledge of programming languages will be an added advantage

For Masters:

- Bachelor's Hons degree in Hydrology, engineering or any other water-related degree.
- Proficient in GIS, remote sensing, and cloud computing applications

How to apply:

For PhD

- Curriculum Vitae (including your contact address, research/work experience, publications and contact information for 3 referees)
- Cover letter
- A research statement (max. 1 page) indicating how you would address the project's aim/objectives.

For Masters

- Curriculum Vitae (including your contact address, research/work experience, publications and Contact information for 3 referees)
- Cover letter

The project will offer a stipend of R100 000 per annum for 2 years for the master's candidate and R184 000 per annum for 3 years for the PhD candidate.

For international students, please take note of the requirements, which can be found on <https://applications.ukzn.ac.za/selection-procedure/international-students-selection-procedure/>

Enquiries regarding the full details of the post and associated duties may be directed to Dr Daniel Kibirige by email at kibiriged@ukzn.ac.za

Applicants must submit their Curriculum Vitae and a cover letter indicating their experience in meeting the stipulated minimum requirements to Ms Kalastrie Chetty, Email: ChettyK2@ukzn.ac.za no later than 31 July 2023. Advert Reference Number MUST be clearly stated in the subject line.