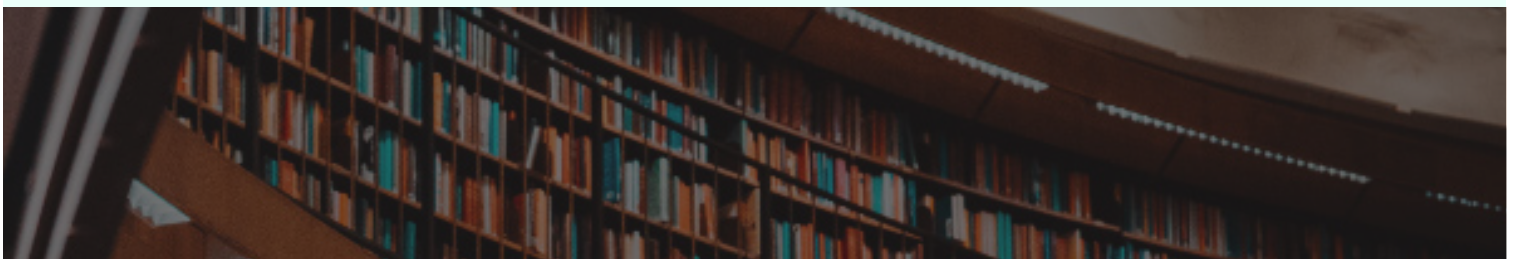


**Kwame Nkrumah
University of Science
and Technology**

WORLD BANK AFRICAN CENTRE OF EXCELLENCE

PhD Programme

IN
WATER RESOURCES MANAGEMENT



DOCTOR OF PHILOSOPHY (PHD) IN WATER RESOURCES MANAGEMENT

RWESCK World Bank African Centre of Excellence, Kwame Nkrumah University of Science and Technology Kumasi-Ghana

The PhD Water Resources Management programme is hosted in the Department of Civil Engineering (DCE) and run under the School of Graduate Studies of the Kwame Nkrumah University of Science and Technology. The Regional Water and Environmental Sanitation Centre (RWESCK) works with the department of civil engineering to strengthen the research, education and competency of sector professionals to deal with the issues of water resources engineering and management. The critical mass of human resources will support provision of solutions to deal with the development challenges confronting Ghana and the Sub-Saharan Africa on inadequate access to safe water supply and environmental sanitation, poor management of water resources, as well as the increasing threats of climate variability, water security, and food and energy security nexus.

Aims and Objectives

The PhD programme ultimately aims at strengthening the research competency of the professionals from the West-African countries to deal with issues of Water Resources Engineering and Management through scientific research, innovation and development. The programme seeks to equip PhD students with knowledge, skills and competences to solve Water Resources Engineering and Management problems through the development of innovative and sustainable approaches.

The objectives of the PhD programme are to equip graduates to:

- Demonstrate state-of-the-art knowledge, skills and competence in Water Resources Engineering and Management
- Independently formulate and execute research in accordance with academic standards leading to contribution to the body of knowledge
- Apply new concepts to solve problems of Water Resources Engineering and Management
- Comprehend within the myriad of challenges, the critical role of climate change and behavioural change towards achieving sustainable water resources management and by extension attainment of SDGs 6 and 13.
- Use scientific knowledge for policy formulation and implementation
- Show evidence of scholarship by publishing at least two (2) articles from PhD research in reputable peer reviewed journal.

Taught Courses and Research

The research proposal including the research plan should be completed in year semester two. During this period students are expected to do comprehensive literature review of their chosen topic. This should be prepared in close consultation with the prospective or appointed PhD Supervisors. The research proposal should be presented before a panel of academic staff for approval. The students will undertake laboratory or fieldwork based on their area of specialization. The field work can be done in Ghana or in the partner institutions depending on the expertise (supervisor), availability of equipment and accessibility to relevant data.

- The final write up of the thesis is expected to be completed in the fourth year.
- Students will write their thesis in the format approved by the School of Graduate studies of the Kwame Nkrumah university of Science and Technology.
- Each student shall submit manuscripts for the publication of at least two papers in an indexed peer review journal.

Table 1: Programme structure, Summary of Courses and Credits

Mod- ule	Module Name	Course Code	Course Name	T (hr)	P (hr)	Total Credit
YEAR ONE - SEMESTER ONE						
1	Public Health and Environment	WRES 743	Environmental Impact Assessment (EIA)	2	1	2
		WRES 719	Environmental and Public Health	2	1	2
		Sub-Total Credits		4	2	4
2	Applied Statistics and Modelling	WRES 727	Applied Statistics for research	2	2	3
		WREM 717	Modelling Tools	1	2	2
		WREM 719	Reliability and Risk Management	1	2	2
		Sub-Total Credits		4	6	7

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Mod- ule	Module Name	Course Code	Course Name	T (hr)	P (hr)	Total Credit
3	Geo-Spatial Analysis	WRES 725	Application of GIS and Remote Sensing in Environmental Systems	1	4	3
		Sub-Total Credits			1	4
4	Skills Development and Research Methodology	WRES 711	Skills Development & Scientific communication	1	2	2
		WRES 713	Research Methods	2	2	3
		Sub-Total Credits			3	6

YEAR ONE – SEMESTER TWO

5	PhD Thesis	WRES 890	PhD Thesis (proposal writing)			
	Elective courses		MSc Courses* MSc Courses**			
	Seminar 1		Global Water and Environmental Issues			
	Seminar 2		Sanitation and waste treatment Technologies			
	Seminar 3		Entrepreneurship and Business Development			

YEARS 2 TO 4 SEMESTERS ONE & TWO

	PhD Thesis research	WRES 890	PhD Thesis research (lab and fieldwork, thesis writing)	0	108	54
TOTAL CREDITS				12	126	74

**Students with deficiency at the MSc level are mandated to take at least 2 relevant MSc level courses,*

***Students can also audit additional courses at MSc level as approved by the supervisor(s)/programme coordinator, to help their research.*

Admission Entry Requirements

In conformity with the entry requirement of the Kwame Nkrumah University of Science and Technology, the applicants have:

- In First or Second Class in their first degree in Water Resources, Environmental Engineering, Agricultural Engineering (Soil and Water Engineering option), Hydrology, Hydrogeology, Natural Resources, Mathematics, or any other relevant discipline or its equivalent.
- Good Master's degree in Water Resources, Environmental Engineering, Agricultural Engineering (Soil and Water Engineering option), Hydrology, Hydrogeology, Natural Resources, Mathematics, or any other relevant discipline from a recognised institution, with an average of at least 60%.
- Students are to pass a selection interview
- Proficiency in English: Must have first or second degree with English language as the medium of instruction, OR Must have an internationally recognised Certificate of Proficiency in English Language (TOEFL or IELTS) with above average score. Otherwise they will undertake a three-month intensive English course at KNUST.

Graduation Requirements

Students shall adhere to agreed rules and regulations of the Kwame Nkrumah University of Science and Technology while following the programme. For a candidate to graduate the following requirements must be adhered to;

- The time required for the completion of the PhD programme shall be 4 years.
- The pass mark for examination in any course shall be 60% and the minimum Cumulative Weighted Average (CWA) for graduation shall be 60%.
- The student will submit thesis for approval by the DCE and RWESCK Management. The thesis must represent an original contribution to knowledge in Water Resources Engineering and Management has to be written in English.
- The defence of the thesis is done by the School of Graduate Studies of the Kwame Nkrumah University of Science and Technology, Kumasi, before an examination panel.
- The minimum number of credit hours required for graduation is 74 credit hours.
- Students will be required to publish at least two (2) articles in a reputable international peer-reviewed journal (SCI, SCOPUS indexing etc.) from their research before qualifying for graduation.
- PhD students are encouraged to attend at least one national/ international conference to present the results of their work.
- Students are required to be on internship for a minimum of 6 weeks.

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Mode of Application

Sale of E-Vouchers for admission is in progress

- Purchase e-Voucher for **GHC280.00** at the following banks: **GCB, CBG or ECOBANK** or **dial *447*160#** on any network and follow the prompts
- Upon payment of the application fee, candidates will receive an e-Voucher containing
- an application number and PIN that will grant access to the on line admissions portal
- Candidates should then proceed to online admissions website: <https://apps.knust.edu.gh/admissions/> and begin the application process
- Once the process has been completed, candidates **MUST PRINT OUT 2 COPIES** of the completed application form from the portal and submit them (by post) to the School of Graduate Studies together with all relevant documents (Photocopies of Certificates, Recommendation Letters, and Transcript for those attending KNUST for the first time) to the following address:

THE SECRETARY
SCHOOL OF GRADUATE STUDIES
(KNUST, KUMASI-GHANA)

Deadline for submission of application forms is 31st October, 2022.

Application forms submitted after the deadline will not be processed.

Admissions will be preceded by an interview. Students awaiting results can apply!

NB: All International Applicants must use this link: <https://apps.knust.edu.gh/admissions/apply/Account/Register> to generate logins and apply online.