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Kwame Nkrumah
University of Science
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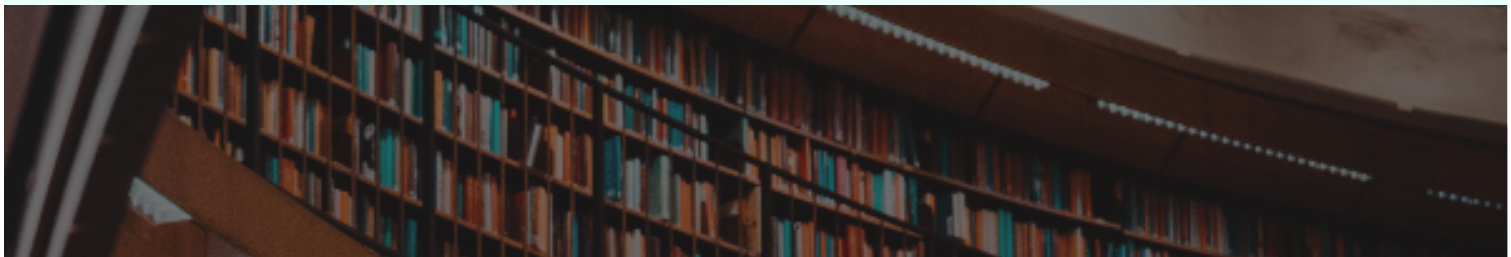
WORLD BANK AFRICAN CENTRE OF EXCELLENCE

MPHIL Programme

IN WATER SUPPLY AND ENVIRONMENTAL SANITATION



MASTER OF PHILOSOPHY (MPHIL) IN WATER SUPPLY AND ENVIRONMENTAL SANITATION

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

The MPhil Water Supply and Environmental Sanitation programme is hosted in the Department of Civil Engineering and run under the School of Graduate Studies of the Kwame Nkrumah University of Science and Technology. The Regional Water and Environmental Sanitation Centre Kumasi, (RWESCK) works with the Department of Civil Engineering to strengthen the research, educational and competency of sector professionals to deal with the issues of water supply and environmental sanitation.

Aims and Objectives

The programme in Water Supply and Environmental Sanitation aims at training students with diverse backgrounds from Ghana and other African countries for careers in water supply and sanitation with due cognizance of the climate change phenomenon.

The objectives of the programme are to equip students to;

- Plan, design, operate and manage water supply and sanitation delivery.
- Conduct feasibility and engineering designs for construction of water and sanitation systems
- Communicate technologies and technical issues on water and sanitation,
- Play essential roles in government institutions and the private sector for sustained water supply and sanitation delivery.
- Comprehend within the myriad of challenges, the critical role of climate change and behavioural change towards achieving sustainable WASH sector and by extension attainment of SDGs 6 and 13.

Taught Courses and Research

Students will undertake one year taught courses and one year research and submit a thesis in partial fulfilment for the award of the MPhil degree.

The research will focus on developing water and sanitation technologies and management tools for sustainable management of the water and sanitation infrastructure. To achieve this, students will apply their knowledge from earlier modules to undertake a detailed research on important water resource management and engineering challenges in Ghana or abroad and write a thesis. Students will be guided by their supervisors but the work will be their own and they will take responsibility for the design, planning and execution of the project. The course also includes seminars where students will present and defend their research proposals and discuss the results of their study. Formal assessment will be given at the final Postgraduate defence hosted by the School of Graduate Studies

Table 1: Programme structure, Summary of Courses and Credits

Module	**Module Name**	**Course Code**	**Course Name**	**T (hr)**	**P (hr)**	**C(hr)**
Year One Semester One						
1	**Introduction to Environmental Sanitation**	CEWR 511	Integrated Water Resources Management	1	1	1
		CEWS 513	Water and Sanitation Infrastructure Planning	1	0	1
		CEWR 515	Applied Hydraulics	1	1	1
		CEWR 517	Urban Hydrology and Urban Drainage	2	1	2
			Total Credits	***5***	***3***	***5***

Mod-ule	Module Name	Course Code	Course Name	T (hr)	P (hr)	C(hr)
Year One Semester One						
2	**Mathematics and Research Methods**	CEWR 521	Statistics and Data Analysis for Environmental Engineers	1	1	1
		CEWR 523	GIS and Data Management in Water Systems	1	1	1
		CEWR 525	Research Methodology	1	0	1
			Total Credits	***3***	***2***	***3***

Mod-ule	Module Name	Course Code	Course Name	T (hr)	P (hr)	C(hr)
3	**Environmen-tal Science and Process Technology**	CEWS 531	Microbiology for Engineers	1	1	1
		CEWS 533	Chemistry for Engineers	1	2	2
		CEWS 535	Process Technology	3	1	3
			Total Credits	***5***	***4***	***6***
4	**Environmen-tal Quality**	CEWS 541	Environmental Issues and Impact Assessment	1	1	1
		CEWS 543	Water Quality Management and Public Health	2	1	2
			Total Credits	***3***	***2***	***3***
		Sub-Total for Semester 1		***16***	***11***	***17***

Module	Module Name	Course Code	Course Name	T (hr)	P (hr)	C(hr)
Year One Semester Two						
5	**Water Supply**	CEWR 552	Source Water Development	1	0	1
		CEWS 554	Water Treatment	2	3	3
		CEWS 556	Water Distribution	2	2	3
		CEWR 558	Hydro-Power Development	2	0	2
			Total Credits	***5***	***5***	***7***
6	**Waste Management**	CEWS 562	Wastewater Management	3	1	3
		CEWS 564	Solid Waste Management	1	1	1
		CEWS 566	On-Site Sanitation	1	0	1
			Total Credits	***5***	***2***	***5***
7	**Management and Institutions**	CEWS 572	Community Participation and Institutional Development	1	0	1
		CEWS 574	Water Project Management	1	1	1
		CEWS 576	Engineering Economy and Financial Management	1	0	1
			Total Credits	***3***	***1***	***3***

Mod-ule	Module Name	Course Code	Course Name	T (hr)	P (hr)	C(hr)
8	**Project Design WSES**	CEWS 582	Project Design and Master Plan (Group Project)	0	6	3
			Total Credits	*0*	*6*	*3*
		Sub-Total for Year one Semester Two		***14***	***14***	***18***
9	**MPhil Thesis WREM**	CEWS 691	Individual Research Thesis	0	24	12
			Sub-Total for Semester 3	***0***	***24***	***12***
			TOTAL COURSE CREDITS	**30**	**49**	**47**

Admission Entry requirements

The basic entry requirements into the programme are those specified by the University as detailed below:

1. First Class or Second Class (Upper Division) degree or its equivalent from a recognized University in Civil or Chemical Engineering, Chemistry or any field of specialisation relevant to the water and sanitation industry.
2. Applicants with qualifications other than those specified in (1) above shall be interviewed and if found necessary, would be required to take a written examination before admission.
3. Applicants whose working language is not English must show that they have good command of both spoken and written English. Wherever necessary, arrangements will be made with the Department of Languages (KNUST) for the acquisition of the necessary English language skills prior to the commencement of the course.
4. Relevant office or field experience will be an advantage.
5. Students are to pass a selection interview

Graduation requirements

1. The minimum time for the completion of the full time MPhil (Water Supply and Environmental Sanitation) programme shall be 2 years. The first two sessions will be dedicated to lectures and the third session for the individual thesis.
2. The programme may also be taken over a 3-year period for part-time students and the MPhil. degree awarded after meeting all the requirements specified.
3. Each student is supposed to undertake a detailed research project under

the supervision of a university lecturer leading to an externally and internally examinable thesis. The thesis is then defended during an oral examination.

4. Students will be required to attend seminars given by professionals from industry, and take part in field trips (study tour) organized as part of the programme.

5. The minimum number of credit hours required for graduation is 47 credit hours.

6. The pass mark for any course subject shall be 50% and the minimum Cumulative Weighted Average (CWA) for graduation shall be 55%

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.