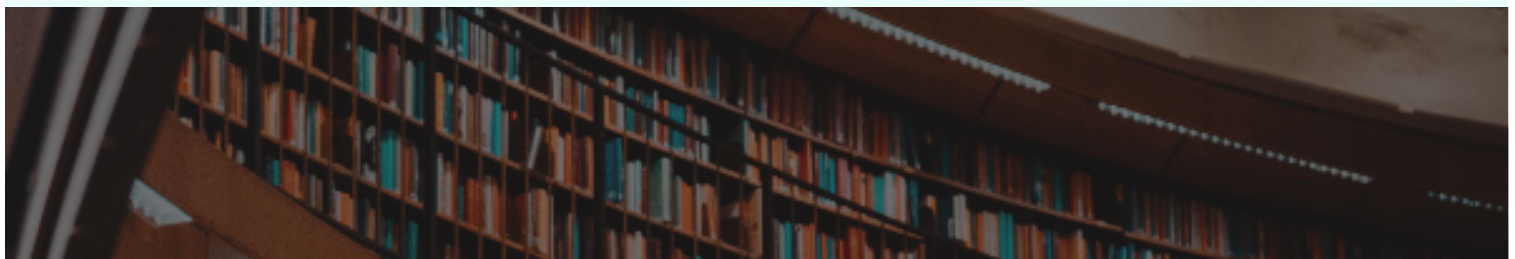


**Kwame Nkrumah  
University of Science  
and Technology**

WORLD BANK AFRICAN CENTRE OF EXCELLENCE

# MSc Programme

**IN WATER ENGINEERING**



# MASTER OF SCIENCE (MSC) IN WATER ENGINEERING

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

The MSc Water Engineering programme will be hosted at 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. It will draw on academic staff from the University and those of the participating universities in the region for teaching and supervision of students.

### Aims and Objectives

The programme aims at training engineers and managers who want to specialize in the field of Water Engineering. Students will have a clear understanding of Integrated Water Resources Management, Flood management, Water Distribution, Modelling and Environmental and Social impacts to enable them play essential roles in Government institutions and in the private sector.

The objectives of the MSc programme are to equip students to:

- Understand the concept of integrated and interdisciplinary approach for managing water systems.
- Identify and critically assess the different societal problems related to water resources and proffer solutions.
- Design hydraulic structures used in the management and control of water.
- Apply the knowledge, skills and competences acquired to solve water Resources related problems.
- Contribute to the development of innovative and sustainable approaches in Water Resources Engineering
- Conduct, independently or in a multidisciplinary team, research.

## Taught Courses and Research

Students will undertake nine (9) months taught courses and three (3) months project work and submit a project work report in partial fulfilment for the award of the MSc degree.

Students will undertake three months project work related to water resources structures, flood control, and water management and submit a project report in partial fulfilment for the award of the MSc degree. To achieve this, students will apply their knowledge from earlier modules to undertake a detailed project work on water resources management issues and write a report. 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 two seminars where students will present and defend their project work and discuss the results of their study. Formal assessment will be the final Postgraduate defence.

Table 1: Programme structure of MSc in Environmental Sanitation and Waste Management

Course Code	Course Name	T (hr)	P (hr)	C(hr)
<b>Year one Semester 1</b>				
CEES 511	Integrated Water Resources Management and Climate Change	2	0	2
CEES 513	Environmental and Social Impact Assessment	2	0	2
CEWE 515	GIS and Remote Sensing in Water and Environmental Systems	2	2	3
CEWE 517	Applied Hydraulics	2	0	2
CEES 519	Meteorology and Hydrometry	2	2	3
CEES 521	Urban Hydrology and Drainage	1	2	2
CEES 523	Source Water Development	2	2	3
<b>Total Credits for Semester 1</b>		<b>12</b>	<b>8</b>	<b>17</b>

Course Code	Course Name	T (hr)	P (hr)	C(hr)
<b>Year 1 Semester 2</b>				
CEES 524	Water Systems Modelling	1	4	3
CEES 526	Irrigation Engineering	3	0	3
CEWE 528	Research Methods	2	0	2
CEWE 530	Engineering Economy and Entrepreneurship	2	0	2
CEWE 532	Project Management and Evaluation	2	0	2
CEES 613	MSc Project Work	0	16	8
<b>Total Credits Semester 2</b>		<b>9</b>	<b>20</b>	<b>20</b>
<b>Total Course Credits</b>		<b>21</b>	<b>28</b>	<b>37</b>

## Admission Entry requirements

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

1. First or Second Class (Upper Division) degree or its equivalent in Civil Engineering, Geological Engineering, Geomatic Engineering, Physics, Mathematics, Environmental Science, Natural Resources, Agricultural Engineering, Water and Sanitation, and other programmes relevant to water engineering from a recognized University;
2. Staff of Municipalities with BSc in Building Technology and related fields with experience in construction of drainage, dams and water infrastructure shall be interviewed and if necessary, may 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 for the acquisition of the necessary English language skills prior to embarking on the course;

4. Relevant office or field experience will be an added advantage;
5. Students are to pass a selection interview.

## Graduation requirements

1. The minimum time for the completion of the full time MSc (Water Engineering) programme shall be 12 months. The first 8 months will be dedicated to lectures with the remaining 4 months dedicated to a detailed project work.
2. The programme may also be taken over a 2-year period for part-time students and the MSc. degree awarded after meeting all the requirements specified.
3. Each student is supposed to undertake a detailed project work under the guidance of a university lecturer leading to an examinable thesis which will be defended during an oral examination.
4. Students will be required to attend seminars given by professionals from industry, and take part in field trips organized as part of the programme.
5. The minimum number of credit hours required for graduation is 37 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.