THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF WORKS AND TRANSPORT

CURRICULUM FOR ORDINARY DIPLOMA CERTIFICATE

(NTA LEVEL 6)

IN

CIVIL ENGINEERING

CURRICULUM INFORMATION REPORT

FOR
INSTITUTE OF CONSTRUCTION TECHNOLOGY

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January, 2021

EXECUTIVE SUMMARY

ES1: The Ministry of Works and Transport (MoWT) have established the Institute of Construction Technology in response to national skills demand with respect to construction services. While the construction industry is fast expanding, the supply of qualified personnel with relevant hands on skills at technicians and artisans levels is declining. The Institute of Construction Technology (ICoT) is expected to fill this gap

ES2: The rationale for establishing Institute of Construction Technology (ICoT) is hinged in the Ministry's Strategic Plan 2020/2021 – 2025/2026 which aims at strengthening institutions under its jurisdiction, including restructuring its training institutions so as to match with its Construction Industry Policy of 2003, National Development Vision (2025), and other National Strategies and Policies whose mission was to create an enabling environment for the development of a vibrant, efficient and sustainable local industry that meets the demand for the services to support sustainable economic and social objectives.

The Institute of Construction Technology (ICoT) was established in 2017 and became operational on November, 2020 in response to national skills demand with respect to construction services and the declining number of personel with relevant hands on skills at technician's and artisan's levels to cope with expansion of Construction industry and Technological advancement. It is mandated to grant awards on Civil, Mechanical and Electrical Engineering on:-

- Basic Technician Certificate (NTA Level 4)
- Technician Certificate (NTA Level 5) and
- Ordinary Diploma (NTA Level 6).

ES3: Vision, Mission and Functions of ICoT

Vision:

Construction and transport sectors provided with sufficient, competent and hands-on skills using the state of the art technologies for sustainable and socio-economic needs of Tanzania.

Mission:

To provide a conducive training and learning environment that readily and effectively imparts competence based knowledge, skills and abilities for carrying out the construction functions necessary for rapid socio-economic progress of Tanzania.

Functions

The core functions of ICoT will be Training, Research and Consultancy. However, ICoT will also be conducting professional courses to various engineering cadres. Other functions will be as defined in the **Memorandum** of **Association** and **Articles of Association (MEMART)** or any other mandate establishing this institution.

The following are the Core Functions of ICoT;

(i) Training

ICoT will offer long term and short term courses. Long term courses will be for a period of up to 3 years which its assessment shall include (30%) theory and (70%) Practicals. Short term courses will be tailor made that will also include labotarory work and practical training.

(ii) Research activities

ICoT will conduct research activities mainly in the area of the construction industry. Both academic staff and students will be involved in the research activities. Outstanding research activities will form a basis for publications to the institute.

(iii) Consultancy activities

ICoT will undertake consultancy activities in collaboration with public and private sector. Income generated from consultancy activities will be used to enhance financial sustainability of the institute.

ES4 : The programme comprises a total of 14 modules that spread over one academic year. Each module is covered in one semester of 17 weeks. Each academic year has two semesters, i.e., a total of 34 weeks. Therefore, the whole programme has a total of 34 weeks of study

for the full-time attendance mode. The modules in the programme are classified at the time being, into fundamental and core modules.

ES5: The programme has an Industrial Practical Training (IPT) module that is assessed as other modules. IPT is scheduled in the second semester of study and carries 10 Credits.

ES6: The next award of the Technician certificate Level 5 shall be made to the students who satisfy the following criteria:

a) Have completed all modules for the award
b) Have achieved a minimum cumulative Grade Point average (GPA) equivalent to pass.
c) GPA shall be computed from grades earned by students using the NACTE guidelines.

1.0 PROGRAMME BACKGROUND

This section outlines the programme rationale, philosophy, aims and objectives of the Technician Certificate (NTA Level 6) in Civil Engineering.

1.1 Programme Rationale

Economic prosperity of society depends on its ability to compete effectively in the constantly changing national and global markets. Industries have exploit opportunities offered by new technologies to remain competitive. Employers need creative and innovative workforce equipped with knowledge, skills and understanding to face these challenges effectively and efficiently. Civil Engineering, like many other technical professions, is affected by the rapid changes currently taking place in science and technology. The philosophy that underlies the review of the curriculum is geared to cater for such changes.

Due to globalization, the approaches of design, construction and maintenance methods used by the Consultants, Contractors, Engineers, Architects and Technicians have been enormously affected. Under this global trend, Tanzania has also been influenced thus affecting socio-economic pattern, education and training needs.

In order to address the needs of most employers, self-employed persons, the construction industry and address the short comings of Knowledge Based Education Training (KBET), this program is a Competence Based Education and training (CBET).

1.2 Programme Philosophy

This programme is geared towards producing innovative, creative and flexible graduates, who will cope up with the dynamic changes of technology and socio-economic needs.

To enhance this philosophy, the programme is designed and developed such that it:

(a) Provides a sound foundation in sciences and develops ability in communication and entrepreneurial skills so as to give the graduates an opportunity for further training;

(b) Allows for development of skilled and professional career education with a strong base in Information and Communication Technologies (ICT);

(c) Offers a wide base of inter-disciplinary aspects in the fields of Civil Engineering;

(d) Enhances graduates' awareness towards socio-economic influences in the design and construction specialty;

(e) Enables graduates to be self-confident and acquire competences that solve day-to day problems;

(f) Satisfied the specified standards in line with the current system of awards, and

(g) Imparts creativeness and strong ability for the graduates to undertake given tasks competently.

It is, therefore, expected that the graduates from this programme will have aspirations to become professionals. The programme is a modular system and will operate under semester structure to facilitate a large degree of flexibility for the graduates' future development.

1.3 Aims of the Programme

The programme aims to achieve the following goals:

(a) To form a flexible course that is responsive to dynamic and rapidly changing society;

(b) To provide the skills and knowledge that are vital to employers and other stakeholders; and

(c) To entice self-realization and skills that enable graduates to be self-employed.

1.4 Objectives of the Programme

The objectives of the programme are to impart:-

(i) Appropriate technical practical skills in constructing and maintaining Civil structures;

(ii) A Thorough understanding of the fundamental principles associated with engineering applications;

(iii) The ability to communicate with members of an organization at the same, higher and lower levels of expertise or responsibility; and

(iv) To become responsive to dynamically changing socio-economic and technological needs.

2.0 ADMISSION REQUIREMETS

Admission to the programme will be open to candidates who have a Technician Certificate in Civil Engineering (NTA Level 5) or its equivalent as may be evaluated and approved by the responsible authority.

9.3 Summary of Modules

S/No.	Code No.	Module title	Semester I	Semester II
1	GST 06101	Coordinate Geometry and Differential Equations	√	
2	GST 06102	Communication and Report Writing Skills	√	
3	CET 06101	Soil Mechanics and Foundations I	√	
4	CET 06102	Reinforced Cement Concrete Design	√	
5	CET 06103	Labour Based Technology I	√	
6	CET 06104	Structural Steel Design	√	
7	CET 06105	Road Engineering Design II	√	
8	CET 06107	Project I	√	
9	CET 06108	Road Construction and Maintanence II	√	
10	GST 06201	Linear Programming, statistics and Probability.		√
11	GST 06202	Enterprise Management		√
12	CET 06201	Soil Mechanics and Foundations II		√
13	CET 06202	Construction Management and Procurement Practise		√
14	CET 06203	Labour Based Technology II		√
15	CET 06204	Structural Timber Design		√
16	CET 06205	Project II		√