

CE-TEC

CENTRES OF EXCELLENCE IN TECHNICAL EDUCATION

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TACKLING TECHNICAL SKILLS SHORTAGE THROUGH EDUCATION
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“We believe that through technical education, citizens can be provided basic tools to participate in the development and maintenance of technologies in their own communities, contributing to job creation, economic development and an improved society. In today’s information age, technical education has never been more key to long-term sustainable development that benefits all”.
FTE Founding Members

Building Centres of Excellence in Technical Education Around the World

CE-TEC is an international technical training programme developed by the Foundation for Technical Education (FTE) delivering hands-on education to train young technicians in developing nations. Bringing an innovative learning experience to areas with limited facilities, CE-TEC programmes provide the foundational skills students need to secure and succeed in modern technical careers.

Mission: To deliver quality technical training through a network of centres of excellence across the developing world with the purpose of producing highly skilled and competent technicians prepared for the workforce.

Delivery Method

CE-TEC training programmes are delivered in English in classrooms provided by its education partners. Each course is supported by in-class instruction, hands-on learning activities simulating on-the-job experiences and academic assessments. The courses are designed to deliver results, teaching the relevant and practical skills students need to succeed in the technical field.

A Global Effort

CE-TEC is supported by partners across the industry to ensure each Centre of Excellence is equipped with the tools needed to provide quality technical education. Partnerships include educational institutes, non-profit organisations, governments, foundations, and private enterprises.

Understanding that local communities are often better positioned to find the solutions to their own problems, CE-TEC training programmes rely on shared responsibilities but local ownership, entrusting the coordination and management to the local leadership team of the schools.

BECOMING A CENTRE OF EXCELLENCE IN TECHNICAL EDUCATION



In the information age, a skilled workforce is essential to drive economic growth forward and create prosperity for all – technical education provides the key.

Large numbers of graduates from traditional technical schools find it difficult to secure jobs because their education does not provide them with sufficient practical experience. Hampered by limited access to quality learning equipment and a teacher-centred approach to education, students are often left feeling disconnected from what they are learning and without the opportunity to apply their knowledge in the classroom.

We are set to invest in quality education institutions that are committed to improving technical education programming to better prepare their students for the workforce.

What the Technical Institution Provides

Hosting Facilities
Clean classroom and laboratory

2 Teachers and 2 Assistants
Qualified educators prepared to undergo further training

Electricity
A stable supply at 230V

Acceptance of our Quality Control Plan
To ensure students are receiving the best education possible

What CE-TEC Provides

All Equipment
Benches and chairs for the labs, scopes, signal generators, power supplies, multimeters, components etc.

Teacher & Assistant Training
A six-month Training seminar based on 3 modules:

- Technical Training
- Pedagogical Training
- Practical Training (in the classroom)

All Training and Examination Materials
Targeted learning materials in line with programme goals

Fully Implemented Quality Control Plan
Professional external audits conducted each academic semester

5 PRINCIPLES



Tried and tested, the CE-TEC training programme is based on 5 principles emphasizing the development of employable skills needed for a successful career as a technician.

- 1. “Learning-by-doing”: Student-centred education using modern learning technologies**
The CE-TEC learning programme is based on a student-centred approach to education, with emphasis on:
 - Hands-on training where each student learns through real-world industry simulations
 - Fully-equipped classrooms with state-of-the-art learning equipment
 - 2:1 student/equipment ratio to ensure each student has the opportunity to master each skill
- 2. “Best of both”: Local teachers with international skills training**
All teachers are hired locally and undergo an intensive 6-month training course led by international experts in the technical, theoretical and pedagogical competencies necessary to teach new technologies. The focus is on skills acquisition and proficiency testing rather than an overemphasis on theory. This is achieved by consistently following three modules:
 - 1) Technical Training:** Teachers undergo hands-on training instruction ensuring teachers can teach each lesson and expertly perform a demonstration.
 - 2) Pedagogical Training:** Trainers are taught how to base each lesson on a student-centred approach. This means that the teaching style is adapted to the students’ needs, interests, abilities and learning styles.
 - 3) Practical Training:** Teachers are brought to the international training academy KIITEC for in-classroom experience. With the aid of a coach, the teachers are provided the opportunity to practice their newly upgraded practical and pedagogical skills.
- 3. “Filling a Need”: Alignment with domestic labour market demands**
At each step of the process we leverage our unique experience in the field to ensure that thorough technical industry needs assessments are conducted to ensure the curriculum is aligned with the labour market demands. Members of our team travel throughout regions in need to forge relations with local industries and determine which skills are most needed. With 100% employment rate as the objective for graduates, each student receives one-to-one mentoring to support their transition into the workforce. A CV writing course and job interview skills training series is conducted annually by our international volunteers.
- 4. “Doers, not nerds”: Business management and entrepreneurship**
Educating skilled and qualified technicians goes beyond the training of basic proficiencies. The curriculum, delivered in English, includes a strong focus on the development of business management and entrepreneurial skills in order to build better-rounded graduates entering the workforce. The education programmes instill a strong sense of discipline that is meant to build and encourage the professionalism needed to prepare each graduate for the workforce.
- 5. “Meritocracy wins”: Merit-based scholarships for young men and women**
Our scholarship programme is based on meritocracy and offers support in tuition, uniforms, education materials and daily lunches, providing the opportunity of education for those who are particularly disadvantaged. We promote equal opportunities for the enrolment of both young men and women. Young women face particular challenges in the technical field, therefore we encourage their success by creating an environment where girls can succeed.

QUALITY CONTROL



Each selected education institute will be assigned a programme coordinator to provide support throughout the entire transition process in becoming a CE-TEC Centre of Excellence in Technical Education.

Quality education requires the commitment of all involved to strive to meet the highest standards in order to produce proficient and skillful technicians. For this reason we have a quality control programme to ensure that all education centres are efficient, the teaching approach is consistently student-centred and the students' educational needs are fulfilled. External auditors travel to the educational facilities every semester to perform the three stages of the audit.

- 1. Classroom Audit:** Sit in classrooms to observe trainings and student behaviour. Focus is on the content and how it is being delivered. In this stage the auditor is looking to ensure that each lesson is student-centred and taught in a way that is understandable by all students, not just the best students in the class.
- 2. Student Evaluation:** Every student is evaluated to determine their progress. A two-hour written technical test is administered as well as individual practical lab exercises to determine equipment comprehension.
- 3. Management Operations:** The auditor meets with the management team and teachers to review performances.

Proof of Concept: KIITEC

The Kilimanjaro International Institution for Telecommunications, Electronics and Computers (KIITEC) is the pilot technical training centre following the 5 principles education model in operation since 2004. KIITEC acts as the international training centre for teachers participating in the CE-TEC training programme.

Located on a 15-acre campus in Arusha, Tanzania, KIITEC offers the most advanced targeted training for technologies in the region. The training centre is registered and accredited by the National Council for Technical Education (NACTE) and trains approximately 45 graduates working toward the National Technical Award Level Six (NTA-6) Diploma each year.

Contact Us

Visit the FTE website at www.ftefoundation.org for more information about the CE-TEC Programme, our existing work and custom training options.

To learn how we can work together contact us at: info@ftefoundation.org.