

Introduction

The purpose of this course is to get Engineers and engineering students to understand the scope of sustainably developing future cities as well as advancing solutions to sustain growing urban populations specifically in Africa but applicable to global cities.

This is simply an introductory course. As engineering, technology, math and sciences are largely practical fields that rely heavily on regular observation and updated research, it is important to expand learning through application, staying updated on current affairs, personal self-study, and research.

The course will help you understand the components, functions, scales, and dynamics of metropolises as a whole, which are crucial for the appropriate design and management of the urban system.

While the development of urban regions in different parts of the world is moving in diverse directions, all estimations show that worldwide populations will continue to grow strongly in the coming years.

Yet already now, there is an extreme shortage of designers and urban planners able to understand the functioning of a city as a system and to plan a sustainable and resilient municipality. Unable to answer questions like which methods can contribute to the sustainable performance of a city, and how can we create these solutions on a generational scale?

In the introduction part titled 0001, we will cover the introduction to sustainable development, then move to the identification of problems globally, and in African cities today, fine-tuning our problem identification skills, innovations, and proposed solutions, companies in Africa embarked on building these solutions and finally fundamentals of subcategories of engineering that contribute to the resilience of metropolitan areas.

In this course, we also try to understand some of the subtypes of engineering such as Electrical, Mechanical, Computer engineering and Data Science, Civil, Chemical, and Bio-engineering, and Industrial and Design engineering.

Eventually, we can glance at the Socioeconomic environment and cultures of People within this scape and how these subcategories improve the livability of urban regions.

We will also introduce you to some important elements that future cities need to adopt for longevity.

We include and at times intersect valuable research and documentation that provide additional study material as well as a next-step program to jump-start innovation.

It is important to note that a major difference in cities of today and the future is its responsiveness which defines the future of urbanization. They evolve from smart cities and are designed and trained to self-resolve sustainability problems in scale.

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