

# (Hong Kong) Continuous Professional Education Centre (香港)持續專業教育・培訓中心

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## **Pearson BTEC Level 4 HNC in Construction and the Built Environment (Civil Engineering)**

### **Individual Project**

The aim of this unit is to support students in using and applying the knowledge and skills they have developed through other areas of their studies to complete and present an individual project. In addition, this unit will provide students with key study skills that will support them in further study.

### **Construction Technology**

This unit will introduce the different technological concepts used to enable the construction of building elements; from substructure to completion, by understanding the different functional characteristics and design considerations to be borne in mind when selecting the most suitable technological solution.

### **Science & Materials**

This unit aims to support students to make material choices to achieve the desired outcomes of a brief. This is approached from the perspective of materials being fit for purpose; as defined by testing standards and properties, but also by consideration of the environmental impact and sustainability. Awareness of health & safety is considered alongside the need to meet legislative requirements.

### **Construction Practice & Management**

The unit compares and investigates small, medium and large construction companies within the market place and how construction processes, for development, have evolved.

### **Construction Information (Drawing, Detailing Specification)**

Through this unit students will develop their awareness of different types of construction information and their uses in the process. Students will engage in the production, reading and editing of construction information, in order to understand how this information informs different stages of the process. Using industry standard tools and systems, students will consider the ways that information may be shared and, through this, the value of collaboration in the information process.

### **Mathematics for Construction**

The aim of this unit is to develop students' skills in the mathematical principles and theories that underpin the civil engineering and building services curriculum. Students

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will be introduced to mathematical methods and statistical techniques in order to analyse and solve problems within a construction engineering context.

## **Principles of Structural Design**

Topics included in this unit are: methods and techniques used to determine bending moments and shear forces in simply supported steel and reinforced concrete beams; deflection in simply supported steel beams; and axial load carrying capacity of steel and reinforced concrete columns.

## **Civil Engineering Technology**

This unit explores the role of professional civil engineers, their essential involvement in the construction and maintenance of infrastructure, and the key technologies they apply. The technologies and processes of civil engineering, in the development of highways, bridges, drainage systems, substructure and superstructure, are crucial to support contemporary societies.