

# Engineering education in ghana

Education



**ASSIGN  
BUSTER**

#### **2.2.4 Education**

Education serves as an engine for economic growth through the accretion of human capital. Education is strongly associated with boosting degrees of societal capital (Campbell, 2006). The act or procedure of learning or getting general cognition, developing the powers of concluding and judgement, and by and large of fixing oneself or others intellectually for mature life (Dictionary.com, 2014).

#### **2.2.5 ENGINEERING Education**

Engineering instruction is the activity of learning cognition and rules related to the professional pattern of technology. It includes the initial instruction for going an applied scientist and any advanced instruction and specialisations that follow. Engineering instruction is typically accompanied by extra scrutinies and supervised preparation as the demands for a professional technology licence.

### **2.3 Technology Education IN GHANA OVER THE YEARS**

Engineering instruction in the so Gold Coast dates back to the 1930's. In August 1931, the Colonial Government requested Achimota College in Accra to form an technology class to develop Africans for senior assignments in the Public Works Department, the railroads and subsequently, the mines. The class, which was based on the external grade course of study of the University of London, consisted of four and a half old ages of survey at Achimota, followed by between three and four old ages of structured post-graduation practical preparation. Initially, the class offered at Achimota led to grades in electrical, mechanical and civil technology, but with the

enlargement of activities in the excavation sector in the Gold Coast, it became necessary for the School to spread out its class offerings to include excavation technology. In malice of the troubles it experienced, the Achimota Engineering School managed to turn out a sum of 25 applied scientists before the start of the Second World War compelled it to close down. These applied scientists were to play cardinal functions in the immediate post-independence development of Ghana and besides served in other African states every bit good as working for international bureaus. With the constitution of the University College of the Gold Coast in Legon, Accra in 1948, university instruction was phased out of the Achimota College campus. Unfortunately, no proviso was made for the transportation of the technology classes to the new University College, therefore the preparation of applied scientists was interrupted between 1948 and 1952 when a School of Engineering was once more established as portion of the new Kumasi College of Technology and the equipment, and some staff of the Achimota Engineering School transferred to Kumasi to organize the karyon of the new school. From 1952 to 1955, the School of Engineering prepared its pupils for rank of the assorted Professional Institutions in the United Kingdom. The formal preparation of alumnus applied scientists of assorted specialisations commenced in 1955 in particular relationship with the University of London and pupils were prepared to take Partss I, II and III of the University of London Bachelor of Science ( Engineering ) External grade scrutinies. The first professional applied scientists produced by the Kumasi School of Engineering, who were all civil applied scientists, graduated with the university of London External B. Sc. ( Eng. ) grade in June 1959. The School of Engineering began to present its ain technology grades in June 1964.

### **2. 3. 1 Technology Education FOR NATIONAL DEVELOPMENT**

Relevance of technology plans to the demands of industry has sometimes been interpreted as a state of affairs in which the merchandises of an technology plan are to be trained to be of immediate usage to industry after small or no post-graduation preparation. Pressures, hence, be given to be put on African technology modules to cut down on the content of the theoretical facets of their classes in favour of vocational facets – force per unit areas which are, in bend, frequently ferociously resisted by technology pedagogues. Yet, technology plans in African Universities stand to derive enormously when there is active co-operation between technology pedagogues and the chief consumers of technology work force based on common regard and clear grasp of the functions of the assorted stakeholders. It is besides anticipated that the technological spread between the developed and the underdeveloped universe will go even wider in the twenty-first Century, therefore, doing technology preparation even more situation-specific. This will intend that Ghana will hold to depend even more on her national establishments for the preparation of the technology work force relevant to their development demands. It will, hence, be necessary for the professional associations and the preparation establishments in Africa to co-operate even more closely in specifying the content of the technology course of study of the twenty-first Century.

### **2. 4 DESIGNING AN ENGINEERING SCHOOL**

#### **2. 4. 1 CONDUSIVE TEACHING Environment**

To forestall the assorted jobs pupils and lectors face in the schoolroom, it is of import to set into consideration the agreement of the schoolroom. Savage <https://assignbuster.com/engineering-education-in-ghana/>

2009 indicates that, the physical arrangement of schoolrooms plays a primary function in the character defining of pupils and goes a long way in bettering the academic presentation of pupils. If a schoolroom is not well designed, it affects the end product of pupils, hence hindering on the intent for which talks are intended. The research on schoolroom environments suggests that schoolrooms should be organized to suit a variety of activities throughout the twenty-four hours and to run into the teacher's instructional ends ( Savage, 1999 ; Weinstein, 1992 ) . The criteria for finding what spatial layout is most appropriate to carry through these maps include: ways to maximize the teacher's ability to see and be seen by all his or her pupils ; ease of motion throughout the schoolroom ; minimize distractions so that pupils are best able to actively participate in faculty members ; supply each pupil and the instructor with his or her own personal space ; and guaranteeing that each pupil can see presentations and stuffs posted in the schoolroom. Seating arrangement in talk rooms are really important since it indicates whether there will be societal exchanges in the category of task behaviorally enlightening. It is besides really important to forestall high traffic corridors in schoolroom designs, such as waste basket corridors. Critically, it is really of import that, pupils have a clear position of the lecturer at every point in class ( Quin et al. , 2000 ) . In making so, the lecturer should besides be giving freedom in his motion through the talk room or schoolroom. There is some grounds that it is utile to restrict ocular and audile stimulation that may deflect pupils with attending and behaviour jobs ( Bettenhausen, 1998 ; Cummings, Quinn et al. , 2000 ) . The physical arrangement of the schoolroom can function as a powerful setting event for supplying pupils effectual direction and facilitate ( or inhibit )

positive instruction or learning interactions. As with other facets of direction, the physical arrangement of the schoolroom should be brooding of the diverse cultural and lingual features of the pupils and be consistent with specific scholar demands.

#### **2.4.2 STAIRWAYS**

Stairways are seen as connections between at least two different degrees. Vertical risers and horizontal paces are connected to stairs over an incline. It can besides be defined as a system of stairs by which people and objects may go through from one degree of an edifice to another. One of the most critical parts of school traffic design is the staircase, which should be located in relation to the inclusive traffic form, maintaining in head burden distribution, safety, finish of pupils between periods and riddance of cross traffic. The staircases should be designed for unsophisticated, fast, and safe motion of male childs and miss. Stairways non merely supply entree to and from assorted floor degrees, but they are used at every period for the perpendicular circulation of pupils altering categories. It is of import that staircases should be designed to guarantee that male childs and miss with books under their weaponries may walk side by side to avoid congestion ; a breadth of 4 pess 8 inches to 5 pess between bannisters is recommended. Stairways should be of fireproof building, taking straight to the out-of-doors. They should be equipped with smoke-control installations, dividing the stairwells from the corridors which they serve.

### **2. 4. 3 Corridor**

A well-designed school has corridors that accommodate the free and informal motion of pupils. The narrow corridor normally requires formal, regimented, and supervised traffic flow. The walls of corridors should be free of all projections. Heat units, imbibing fountains, fire asphyxiators, cabinets, doors, and show instances should be recessed in the involvement of pupil safety. Acoustic belongings are desirable to cut down hall noise. Corridors should be good lighted, with exigency proviso in the event of chief powerfailure. Floor covering should be lasting, nonskid, and easy to keep. The maximal length of unbroken corridors should non transcend 150 pess to 200 pess longer subdivisions give an unwanted position.

## **2. 5 FORMAL SPACES**

### **2. 5. 1 CLASSROOMS**

Classrooms have comparatively straightforward demands: line of sight, good acoustics, and a focal point at the forepart of the room helping as the platform for instructors to talk.

Physical restraints such as the ability of pupils to turn around in their seats, can restrict the success of a designed schoolroom infinite. The room may be designed for pupil coaction. Seatings may be arranged in mated rows with specially design chairs that allow pupils to confront each other for coaction.

Apart from the schoolroom and formal infinites, educational establishments are besides designed with the proviso of informal infinites in head.

### **2. 5. 2 Offices**

The finding of whether an office or cell will be assigned is based on an person 's occupation description and place within the organisation. Factors such as confidentiality or security demands, figure of employees supervised and particular equipment demands will be evaluated. Offices should be placed near the inside nucleus infinite. This increases the incursion of natural visible radiation into the edifice. When it is impractical to turn up offices near the inside nucleus, door running lights and borrowed visible radiations should be considered to convey daytime into the interior infinities. Translucent glazing such as frosted or patterned glass can be used if there is a ocular privateness demand. Offices located in the inside of the edifice infinite should be provided with a door or running light assembly or a borrowed visible radiation ( interior window ) in at least one wall at a tallness above the finished floor that allows ocular privateness while conveying visible radiation from the exterior.

### **2. 6 REQUIREMENTS OF LECTURE HALL SPACES**

( The followers demands of a schoolroom design have been taken from the “ University of Maryland, Baltimore County General Lecture Hall Design Guidelines, and Revised August 25, 2000 ) . Physical Access and Movement - The design shall take into history the flow of pupils both in and out of the infinite and within the infinite every bit good as the demand for the teacher to travel about in the forepart of the room.

1. Sufficient infinite is needed near the forepart of the room for puting up audiovisual equipment, such as projection screens and charts.



2. Ceilings should be a upper limit of 9.5 m high.
3. Light from Windows should, if possible, come over a student's left shoulder. No lecturer should be required to confront the Windows when turning the category from the normal teaching place.
4. Ceilings and/or walls should be acoustically treated.
5. Floors should hold a cushioning stuff.
6. The schoolroom should hold as quiet a location as possible, off from noisy out-of-door countries. Ease of entry to specialise installations outside the academic unit should be ensured.

#### **2.6.1 DOORS**

The flow of pupils should be the major factor in finding the location of entryways. Entrances should be located to avoid pupil traffic going through non-instructional countries. In addition, big numbers of pupils going in corridors and hallways can bring forth unwanted noise. In finding the size of entryways and issues, constructing codifications should not be the lone standard. The flow of pupils in and out of suites can hold a major impact on size of entryways and issues. The design of entryways, issues, steps, corridors, and exterior ways should take into history between-class pupil traffic. For illustration, it is not realistic to presume that a room will be wholly vacant when pupils begin getting for the following category. Provision should hence be made for vision panels in entryway doors. They could be tinted. Besides, provision should be made for door knockers to protect the wall surface.

### **2. 6. 2 FLOOR, WALLS AND CEILINGS**

In smaller schoolrooms, it is common to utilize vinyl composing tile or rug. Rug should be provided in all suites unless subject particular related classes dictate otherwise. The ceiling tallness is another of import consideration when planing the infinite. For illustration, because a projection screen must be big plenty to expose images of equal size, it must be placed high plenty from the floor to supply unobstructed sight lines. This normally requires a ceiling tallness higher than the standard eight pess.

### **2. 6. 3 NOISE CONTROL**

Other of import factors must be considered in the design. To avoid the noise generated by their operation and usage, peddling machines must be located as far off as possible. Trash and recycling containers should be located near the peddling machines. Restrooms and imbibing fountains should be located nearby and should be designed to manage pupil usage between categories. To forestall unwanted noise transmittal, public toilets should non portion common walls, floors, or ceilings with instructional infinites