CMG 2101 Construction Materials

Hours Per Week			Hours per Semester	Weighted Total Mark	Weighted Exam Mark	Weighted Continuous Assessment	Credit Units
LH	PH	TH	CH	WTM	WEM	WCM	CU
4	0	4	60	100	60	40	4

Rationale/Course Description

There are different materials used in construction. These materials have different properties that influence their application. The materials also respond differently when subjected to different conditions. The course provides knowledge of all these aspects which is important for all construction professionals.

Objectives/Aims

- To introduce the student to the basic properties of construction materials
- To examine the behavior and performance of construction materials under different conditions
- To understand constituent components and preparation of different construction materials

Course Outline

1. Introduction to the properties of materials [15 CH]
   - 1.1 plasticity,
   - 1.2 elasticity,
   - 1.3 density,
   - 1.4 porosity,
   - 1.5 hardness.
   - 1.6 Optical, electrical, thermal and acoustic properties.

2. Manufacture of building materials: [15 CH]
   - 2.1 wood and wood products,
   - 2.2 bricks,
   - 2.3 fibre cement,
   - 2.4 ceramics,
   - 2.5 plastics,
   - 2.6 sealants and mastics,
   - 2.7 stones.

3. Concrete technology: [10 CH]
   - 3.1 cement,
   - 3.2 aggregates,
   - 3.3 water and admixtures,
   - 3.4 properties of fresh concrete;

4. Metals in buildings: [10 CH]
   - 4.1 structural ferrous alloys,
   - 4.2 corrosion and protection,

4.3 welding,
4.4 failure

5. Behavior of building materials and structures under fire exposure. [10 CH]