

Lesson Plan

NEUROHEADWAY

Neuroscience Into Education

Introduction into Engineering

What is engineering and what do engineers do?

Learning objectives:

- To be exposed to the concept of engineering.
- To appreciate what the work of an engineer involves.
- To learn the basic engineering disciplines and how they are responsible for products we use in everyday life.

Slide	Subject	Description	Time
1	Title page	Brief discussion of the sketches (from top to bottom, from left to right): Bridges – creations of civil / structural engineers Airplanes – creations of aerospace engineers A surveying engineer taking measurements in the field, where a project is going to be built Drawings, the medium engineers use to present their work (x 2) Stadiums – creations of civil / structural engineers A chemical engineer at work – mixing substances to create new ones Engines – creations of mechanical engineers Cars – creations of mechanical engineers Factories/plants – creations of mechanical/industrial/process engineers Computers – creations of electrical/computer engineers Ships – creations of naval engineers	4 min
2	Contents	Go through the contents to prepare the audience on what follows	4 min
3	What is engineering?	Explain what engineering is. Give emphasis on the use of science (mathematics, physics, chemistry etc.) to achieve practical purposes, for example to make products. Explain that design, construction, operation and maintenance are parts of the work of an engineer and will be explained in the following slides.	5 min

Power point Example

What is engineering ?

Engineering is the application of scientific knowledge and mathematical methods to achieve practical purposes.

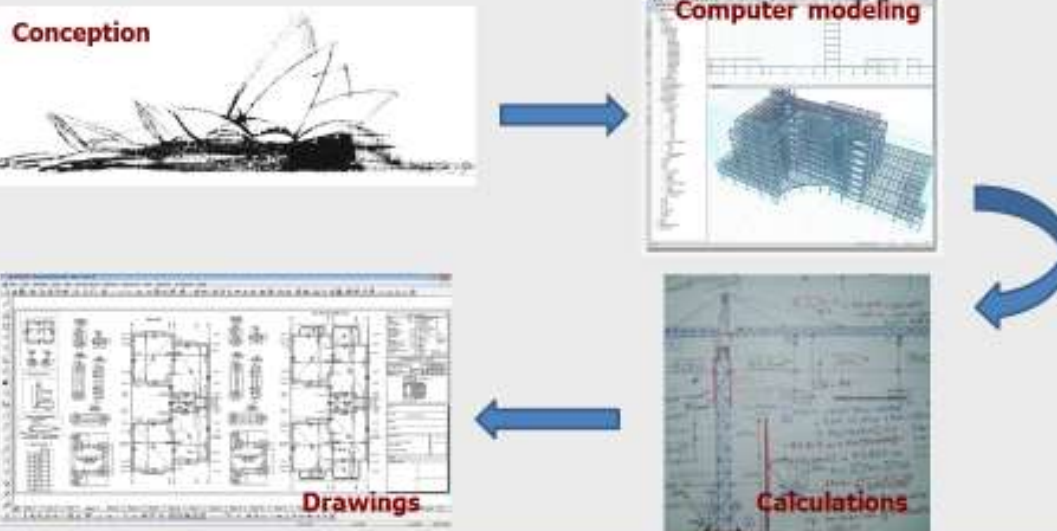
It consists of the design, construction, operation and maintenance of structures, machines, or systems.

There are several engineering disciplines and we will get to know some of them here. But first let us clarify some concepts which are common to all engineering disciplines.



What is design ?

Design is the creation of a plan for the construction of an object. It commonly consists of the following steps.



What is construction/manufacturing ?

Construction/manufacturing is the process of implementing a design to create the object.

Factory



Construction site



What is operation ?

Operation is the use of a designed and constructed object for serving a purpose that it useful for society..



What is maintenance ?

Maintenance is the process of inspecting and repairing an object so that it continues serving its purpose in a proper manner.

