THE ENGINEERING PROFESSION

Engineering is one of the oldest occupations in the history of mankind. Indeed without the skills that are included in the field of engineering, our present-day **civilization** could never have evolved. The skilled technicians who devised **irrigation systems** and erected the great buildings of the ancient world were the civil engineers of their time. Engineering is often defined as the practical application of theoretical sciences such as physics or chemistry, for the benefit of humanity. The early **branches** of engineering were based on **empirical information**.

Civil engineering deals with the **design** and **construction** of objects that are intended to be **stationary**. In practice, this definition includes buildings and houses, **dams**, tunnels, **bridges**, canals, **sanitation systems**. The stationary parts of transportation systems such as **highways**, **runways**, **port facilities** and **roadbeds** for railroads. Civil engineering offers a particular challenge because almost every structure or system that is designed and built by engineers is **unique**. One structure rarely duplicates another exactly since **site requirements** and other factors generally result in **modifications**.

Within the field of Civil Engineering itself, there are sub-divisions: ***Structural Engineering*** which deals with permanent structures, ***Hydraulic Engineering***, which is concerned with systems involving the flow and control of water or other fluids, ***Environmental Engineering***, which involves the study of water supply, purification and sewer systems, ***Geotechnical Engineering***, which deals with the mechanics of soil, ***Transportation Engineering*** which makes possible the design of complex road systems able of controlling traffic, etc.

Engineers must be willing to undergo a continual **process** of education and be able to work in other **disciplines**. The systems that they produce must be workable from an economic as well as a technical point of view. Furthermore, civil engineers must be **environmentally –conscious** and continuously consider the **impact** of their constructions on the surrounding environment and eco-systems.

Word List

- ✓ *civilization* = πολιτισμός
- ✓ *irrigation system* = αρδευτικό σύστημα

- ✓ *branch* = κλάδος, παρακλάδι
- ✓ *empirical information* = εμπειρικά στοιχεία
- ✓ *design* = σχεδιασμός
- ✓ *construction* = κατασκευή
- ✓ *stationary* = σταθερό/ στάσιμο
- ✓ *dam* = φράγμα
- ✓ *bridge* = γέφυρα
- ✓ *sanitation system* = σύστημα αποχέτευσης
- ✓ *highway* = αυτοκινητόδρομος
- ✓ *runway* = αεροδιάδρομος
- ✓ *port facilities* = λιμενικές εγκαταστάσεις
- ✓ *roadbed* = οδόστρωμα
- ✓ *unique* = μοναδικό
- ✓ *site requirements* = απαιτήσεις του εργοταξίου/ της τοποθεσίας
- ✓ *modifications* = τροποποιήσεις
- ✓ *Structural Engineering* = Δομοστατική Μηχανική
- ✓ *Hydraulic Engineering* = Υδραυλική Μηχανική
- ✓ *Environmental Engineering* = Περιβαλλοντική Μηχανική
- ✓ *Geotechnical Engineering* = Γεωτεχνική Μηχανική
- ✓ *Transportation Engineering* = Μηχανική Μεταφορών
- ✓ *process* = διαδικασία
- ✓ *discipline* = επιστημονικός κλάδος
- ✓ *environmentally-conscious* = περιβαλλοντικά ευαισθητοποιημένος
- ✓ *impact* - αντίκτυπος