

CV4108 IT in Engineering Construction

[Lecture: 26 hr ; Tutorial: 13 hr ; Lab: 0 hr ; Pre-requisite: Nil ; Academic Unit: 3.0]

Learning Objective :

This course aims to provide an understanding of essential issues of IT synergy and integration in AEC. The emphasis is to address a number of challenges in implementing IT development and commercial packages in the construction industry.

Course Content :

Overview of IT deployment in the construction industry. Data-centric and document-centric design of construction information. Study and use of project management packages for project planning, cost estimating, progress monitoring and cash flow management of multi-projects. Construction process flow analysis and information management for supply-chain through electronic collaboration and Internet tools. Introduction to AI tools and decision support systems. Case studies of benchmarked projects in deploying IT tools for construction engineering and management problems.

Course Outline :

S/N	Topic
1	AEC, the status quo
2	Classification of construction information
3	Construction process flow analysis and design
4	Document-centric design
5	Data-centric design
6	Project management software overview
7	Database management in PMS
8	Project planning and cost estimation using PMS
9	Project monitoring and cash flow control using PMS
10	Project collaboration in supply-chain (E-business)
11	Project procurement in supply-chain (E-commerce)
12	Construction simulation

Learning Outcome :

Upon completion of the course, students should be able to:

1. have a general overview and background on the range of construction applications.
2. learn the underlying information technologies that make construction applications possible.
3. apply major types of commercially developed application packages that perform common functions required by construction professionals.
4. appreciate advanced concepts and technologies that are already beginning to define some trends for future applications in the industry.

Textbooks :

No specific text is required since the course covers a diverse range of topics

References :

- Garold D. Oberlender, "Project management for engineering and construction", Mc-Graw-Hill International Editions, 2000.
- Clifford F. Gray, Erik W. Larson, "Project management – the managerial process", McGraw-Hill, 2003