

Department : Building & Construction Technology Engineering

Subject :Computer Applications (3)

Class : Fourth year

Hours : 1 hrs (Theoretical) , 2hrs (Practical)

Objectives :

The student must learn the structural analysis & design for all structures types using the most recent methods including programs such as (STAAD. pro, CONCAD, SAFE, CSI Bridge, Prokon, Epanet and AutoCAD land development desktop AutoCAD land development desktop).

Week	Syllabus
1	General description of the STAAD. pro structural program , Starting the Programs , Creating a new Structure .
2	Creating the Model (Beam, Column, Slab or plate, wall or surface and solid) using Graphical Interface .
3&4&5&6	Menus bar (file, edit, view, tools, select, geometry)
7&8&9&10	Application examples of structural engineering in STAAD. pro program (analysis and design of concrete beam, column, slab, shear walls and multi-story building subjected to floor load, wind load, earthquake load temperature load and pre-stress load)
11&12&13	Analysis and design of foundation (isolated, strip raft and pile footing using STAAD.pro and STAAD.foundation programs)
14	Analysis and design of steel structure
15	Various applications in civil engineering using structural programs such as : 1.Concad program for analysis and design of concrete beams.
16&17	2. SAFE program for analysis and design of slabs.
18&19&20	4. CSI Bridge for analysis and design of various types of bridges
21	4. Prokon program.
22&23&24	5. Epanet program for water supply network system
25&26 &27&28	6. AutoCAD land development desktop for roads design
29&30	Mini project .

References :

1. **STAAD. pro 2006 Getting Started & Examples Manual / esearch Engineer .**
2. **Structural Analysis / R.C. Hibbeler .**
3. **نظرية الانشاءات / د. عبدالفتاح ديوان و أحمد فهمي**
4. **تصميم المنشآت الخرسانية والمنشآت مسبقة الجهد / د. علاء محمود حسين النجمي**