College:Engineering Department:Civil Engineering

Course Title: ***Computer Application in Civil engineering***

Course No: 0901506

Credit Hours: 3

Semester:1

About The Course

Course Title: ***Computer Application in Civil engineering*** Class:
Course No:0901506 Lecture Room: 301

Obligatory/ Optional:
Text Book:

The Instructor

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Course Description

The software provides quick and reliable answers to everyday structural and geotechnical engineering problems: Other structural applications such as section properties calculation and section database, Frame and finite element analysis, Steel member design, Steel connection design , Reinforced and pre-stressed concrete design (beams, slabs, columns, footings), CAD and reinforced concrete detailing, Timber member design, Masonry design. A project of analysis and design of multi-story reinforced concrete building using Prokon program. Introduction of SAP2000 computer program to analysis different types of beams under different loading condition (simple beams, continuous beams).

Course Objectives

To understand how to use software programs such as Prokon and SAP2000 in Civil engineering application and to find reasonable solution for issues related to civil Engineering topics (Analysis, Design).

Learning Outcome

structural applications using Prokon, such as section properties calculation and section database, Frame and finite element analysis, Steel member design, Steel connection design , Reinforced and pre-stressed concrete design (beams, slabs, columns, footings), CAD and reinforced concrete detailing, Timber member design, Masonry design. A project of analysis and design of multi-story reinforced concrete building using Prokon program. Introduction of SAP2000 computer program to analysis different types of beams under different loading condition (simple beams, continuous beams).

Making students aware of how language works to convey meaning as its basic function

Course Outline and Time schedule

Week	
First week	
	Section properties calculation and section database
	Wind Analysis
2nd week	Simple Beam Analysis , Beam on Elastic Foundation Frame and finite element analysis,

		Frame Analysis
	3rd week	Continues beam Analysis
		Truss Analysis
		Steel member design
	4th week	Steel member design, Steel connection design
		Bolt Connection , Weld Connection
		EXAM I
	5th week	**EXAM I**
		Reinforced and pre-stressed concrete design
		Reinforced and pre-stressed concrete design
	6th week	Reinforced Concrete Continuous beam Design
		Reinforced Concrete Continuous beam Design
		Reinforced Concrete ColumnDesign
		Reinforced Concrete ColumnDesign

7th week	
	Design of RC footings (Single and combined Footing), retaining Wall Design, Timber member design, Masonry design.
	Design of RC footings (Single and combined Footing), retaining Wall Design, Timber member design, Masonry design.
8th week	**EXAM II**
	EXAM II
	Analysis and design of multi-story reinforced concrete building
9th week	Analysis and design of multi-story reinforced concrete building
	Analysis and design of multi-story reinforced concrete building
	Analysis and design of multi-story reinforced concrete building
10 th week	Analysis and design of multi-story reinforced concrete building
	Introduction of SAP2000 (Primary Level)
	Introduction of SAP2000(Primary Level)
11th week	Introduction of SAP2000(Primary Level)
	Introduction of SAP2000 (Primary Level)
	Site exploration methods ,

12th week	Soil and rock sampling
	Introduction of SAP2000 (Beam Analysis)
	Introduction of SAP2000(Truss Analysis)
13th week	Introduction of SAP2000(Frame Analysis)
	Introduction of SAP2000 (Frame Analysis)
	Introduction of SAP2000 (Frame Analysis)
14th week	Project For all Students (Final Exam)
	Project For all Students (Final Exam)
	Project For all Students (Final Exam)
15thweek	Project For all Students (Final Exam)
	Project For all Students (Final Exam)
	Project For all Students (last day to submit the Project)

Presentation methods and techniques

Methods of teaching varied according to the type of text, student and situation. The following techniques are usually used:

1- Lecturing with active participations.
2- Problem solving.
3- Cooperative learning.
4- Discussion.
5- Learning by activities.
6- Connecting students with different sources of information

Sources of information and Instructional Aids

For example: … power point , videos lecture .

- Transparencies
- Distance learning
- Library sources

Assessment Strategy and its tools

The assigned syllabus is assessed and evaluated
Through: feed back and the skills that are acquired by the students

The tools:

1- Digonistic tests to identify the students level and areas of weakness
2- Formal (stage) evaluation
   a) Class Participation 20%
   b) Ist Exam 20%
   c) 2nd Exam 20%
   d) Final Exam 40%

Tool & Evaluation

Tests are permanent tools & assessment, in addition to the activity file which contains curricular and the co-cussiculor activities, research, report papers and the active participation of the student in the lecture.

The following table clarifies the organization of the assessment schedule:

Test	Date	Grade
First Exam	28/3/2019	20
2nd Exam	28/4/2019	20
Activities & Participation	Students should be notified about their marks	20
Final Exam	Not yet	40

Activities and Instructional Assignment

1- Practical assignments to achieve the syllabus objectives.

2- ……..

Regulations to maintain the teaching-Learning Process in the Lecture:

1- Regular attendance.

2- Respect of commencement and ending of the lecture time.

3- Positive relationship between student and teacher.

4- Commitment to present assignments on time.

5- High commitment during the lecture to avoid any kind of disturbance and distortion.

6- High seuse of trust and sincerity when referring to any piece of information and to mention the source.

7- The student who absents himself should submit an accepted excuse.

8- University relevant regulations should be applied in case the studen,s behavior is not accepted.

9- Allowed Absence percentages is (%).

References :

1-PROKON User's Guide (free downloaded from internet),

2-Introductory Tutorial for SAP2000 (free downloaded from internet).