

Course Specifications (2010 - 2011)

A. Basic Information

Course Title	Mechanics			Course Code:	CVE 114		
Lecture:	2	Tutorial:	2	Practical	0	Total	4
Programme (s) on which this course is given:	B.Sc. Civil Engineering (General)						
Major or minor element of program:	Minor						
Department offering the program:	Civil Engineering						
Department offering the course:	Civil Engineering						
Academic Year of program:	First	Level of program:	First Semester				
Date of specifications approval:	16/3/2010						

B. Professional Information

1. Overall aims of course

By the end of the course the students will be able to:

Understand the characteristics of different shapes of sections (centroid and moment of inertia). Study the special cases of loading on the structures and the reactions. Also, study dynamic loading on the structures. Understand the mechanics of the rigid bodies and the stability of different structures.

2. Intended Learning outcomes of Course (ILOs)

a. Knowledge and Understanding:

- a.1) Recognize concepts and theories of mathematics and sciences, appropriate to the discipline.
- a.4) Understand principles of design including elements design, process and/or a system related to specific disciplines.
- a.5) Recognize methodologies of solving engineering problems, data collection interpretation.
- a.8) State current engineering technologies as related to disciplines.
- a.12) Recognize contemporary engineering topics.
- a.14) Understand Properties, behavior and fabrication of building materials.

b. Intellectual Skills

- b.1) Select appropriate mathematical and computer-based methods for modeling and analyzing problems.
- b.2) Select appropriate solutions for engineering problems based on analytical thinking.

b.7) Solve engineering problems, often on the basis of limited and possibly contradicting information.

c. Professional and Practical Skills

c.2) Professionally merge the engineering knowledge, understanding, and feedback to improve design, product and/or services.
 c.3) Create and/or re-design a process, component or system, and carry out specialized engineering designs.
 c.6) Use a wide range of analytical tools, techniques, equipment, and software packages pertaining to the discipline and develop

d. General and Transferable Skills

d.2) Work in stressful environment and within constraints.
 d.3) Communicate effectively.
 d.7) Search for information and engage in life-long self learning discipline.

3. Contents

Week #	Topics	No. of Hours	ILOS	Teaching / learning methods and	Assessment method
1	Center of Mass for the Rigid Bodies	4	a1,a4	Lectures	Assignments
			b1,b2	Lectures	Assignments
			c2,c6	Class activity	Assignments
			d2,d7	Class activity	Assignments
			a1,a4	Lectures	Assignments

2	Center of Mass for the Rigid Bodies	4	b1,b2	Lectures	Assignments
			c2,c6	Class activity	Assignments
			d2,d7	Class activity	Assignments
3	The Centroid of Areas	4	a5,a8	Lectures	Assignments
			b2,b7	Lectures	Assignments
			c3,c6	Class activity	Assignments
			d2,d3	Class activity	Assignments
4	Moment of Inertia	4	a5,a8	Lectures	Assignments
			b2,b7	Lectures	Assignments
			c3,c6	Class activity	Assignments
			d2,d3	Class activity	Assignments
5	Special cases of loading on the structures and the reactions	4	a5,a12,a14	Lectures	Assignments
			b1,b2	Lectures	Assignments
			c2,c3	Class activity	Design Project
			d2,d3,d7	Class activity	Design Project
6	Special cases of loading on the structures and the reactions	4	a4,a5,a12	Lectures	Assignments
			b2,b7	Lectures	Assignments
			c2,c3	Class activity	Assignments
			d2,d3,d7	Class activity	Assignments
7	Dynamic load on the Structures	4	a4,a5,a12	Lectures	Assignments
			b1,b2,b7	Lectures	Assignments
			c2,c3	Class activity	Design Project
			d2,d3,d7	Class activity	Design Project
8	Midterm Exam	4	a,4,a5,a12		Mid-term exam
			b1,b2		Mid-term exam
			c3,c6	Class activity	Mid-term exam
			d2,d3	Class activity	Mid-term exam
9	Velocity of the rigid bodies	4	a5	Lectures	Assignments
			a12	Lectures	Assignments
			b2	Class activity	Assignments
			b7	Class activity	Assignments
10	Velocity of the rigid bodies	4	a4,a5,a14	Lectures	Assignments
			b1,b2	Lectures	Assignments

10	velocity of the rigid bodies	4	c3,c6	Class activity	Assignments
			d2,d3	Class activity	Assignments
11	acceleration of the rigid bodies	4	a4,a5,a14	Lectures	Assignments
			b1,b2	Lectures	Assignments
			c3,c6	Class activity	Assignments
			d2,d3	Class activity	Assignments
12	Stability of different structures (Beams)	4	a4,a5,a14	Lectures	Assignments
			b1,b2	Lectures	Assignments
			c3,c6	Class activity	Assignments
			d2,d3	Class activity	Assignments
13	Stability of different structures (Frames)	4	a4,a5,a14	Lectures	Assignments
			b1,b2	Lectures	Assignments
			c3,c6	Class activity	Design Project
			d2,d3	Class activity	Design Project
14	Stability of different structures (Frames)	4	a4,a5,a14	Lectures	Assignments
			b1,b2	Lectures	Assignments
			c3,c6	Class activity	Report
			d2,d3	Class activity	Report
15	Final Exam	4	a4,a5,a14		Final exam
			b1,b2		Final exam
			c3,c6		Final exam
			d2,d3		Final exam
Total		60			

4- Teaching and Learning Methods:

Check using the symbol \checkmark

\checkmark	Lectures
	Practical training / laboratory
	Seminar / workshop
\checkmark	Class activity
\checkmark	Case study
	Project work
	Tutorial
	Computer based work

Other :

5- Student Assessment Methods:

Check using the symbol √

√	Assignments	to assess
√	Quiz	to assess
√	Mid-term exam	to assess
	Oral exam	to assess
√	Final exam	to assess
	Design Project	to assess
	Report	to assess
	Experimental write up	to assess
	Informally assessment	to assess
	Other	to assess

a1,a4,a5,a14	b1,b2,b7	c3,c6	d2,d3,d6
a4,a5,a8	b1,b2	c2,c3,c6	d2,d6
a4,a5,a12	b1,b2	c3,c6	d2,d3
a1,a4,a5,a8	b1,b2,b7	c4,c6	d1,d2,d3

6. Assessment schedule

Assessment 1 Assignments on weeks
 Assessment 2 Assignments on weeks
 Assessment 3 Mid-term exam on week
 Assessment 4 Assignments on weeks
 Assessment 5 Assignments on weeks
 Assessment 6 Design Project on weeks
 Assessment 7 Report on weeks
 Assessment 8 Final exam on week
 Assessment 9 Informally assessment

1,2
3,4,5,6,7
8
9,10
11,12,13,14
15

7. Weighting of Assessments

Assignments	10%
Quiz	5%
Mid-term exam	15%
Oral exam	
Final exam	70%
Design Project	
Report	
Experimental write up	
Informally assessment	
Other	
Total	100%

8. List of References

8.1 Course Notes

course notes & solved examples

8.2 Essential Books (Text Books)

"Theory of Structures-Part1" by El-Dakhakhni.

"Plane Dynamics of Rigid Body" by group of professors at Faculty of Engineering

8.3 Recommended Books

"Problem-Oriented text in Structural analysis & mechanics1" by Pro.Dr.Abdel-

"Vector Mechanics for Engineering (Statics and Dynamics)" by Ferdinand P.Beer

8.4 Periodicals Web sites, etc

To be sited during the course lectures

9. Facilities Required for Teaching and learning

White board

Course Coordinator:

Dr. Adel Fayez Ibrahim

Course instructor:

Dr. Adel Fayez Ibrahim

Head of department:

Prof. Ahmed AdbulFattah Mahmoud Ahmed

Signature:

Date:

D	M	Y
10	1	2012