



College: Engineering

Department: Civil Engineering

Course Title : Construction materials Laboratory

Course No : 0901305

Credit Hours : 1 C.H.

Semester: Second 2020/2021

About The Course

Course Title : Construction materials Laboratory

Class : 1+2

Course No : 0901305

Credit Hours : 1C.H.

Lecture Room: 104

Obligatory / Optional : Obligatory

Text Book: Neville.Fifth Edition , American Standard for Testing Materials (ASTM); British Standard.

The Instructor

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Title: Engineering

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Course Description

Normal Consistency & Setting Time of Cement Past; Fresh and Mechanical Properties of Mortar; Sieve Analysis of Aggregate; Specific Gravity of Aggregate; Unit Weight of Aggregate; Abrasion test of Aggregate; Fresh and Mechanical Properties of Concrete; Mechanical Properties of Steel; Tests on wood (Mechanical and Visual); Impact Test on Steel: Hardness Test on Metals.

Course Objectives

By the end of the course, you should be able to do the following:

- *Normal Consistency & Setting Time of Cement Paste*
- *Fresh and Mechanical Properties of Mortar*
- *Sieve Analysis of Aggregate*
- *Specific Gravity of Aggregate*
- *Unit Weight of Aggregate and Abrasion test of Aggregate*
- *Fresh and Mechanical Properties of Concrete*
- *Mechanical Properties of Steel and wood*

Learning Outcome

After successfully completing this course, the students should be able to understand Construction materials Laboratory.

Course Outline and Time schedule

Week	Course Outline	
2/16	<i>Introduction and Report Writing</i>	
3/16	<i>Normal Consistency & Setting Time of Cement Paste</i>	
4/16	<i>Fresh and Mechanical Properties of Mortar</i>	
5/16	<i>Sieve Analysis of Aggregate</i>	
6/16	<i>Specific Gravity of Aggregate</i>	
7/16	EXAM MID	
8/16	<i>Unit Weight of Aggregate and Abrasion test of Aggregate</i>	
9/16	<i>Fresh and Mechanical Properties of Concrete</i>	
10/16	<i>Mechanical Properties of Steel and wood</i>	
11/16	<i>Review</i>	
12/16	FINAL EXAM	

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.
Involve the civil engineering students in asking some questions related to the target topic of the course.
- 2- Problem solving.
Encourage the students to solve the given assignments and submit them at the definite time,
- 3- Cooperative learning.
By enhancing the students studying in groups .
- 4- Discussion.
To discuss the results and the answers of the target problems.
- 5- Learning by activities.
To encourage the students to some group activity.
- 6- Connecting students with different sources of information.

Sources of information and Instructional Aids

- Computer softwear ... power point
- Using weight board.

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:

- Assignments: 10%
- Attendance: 10%
- Term Tests And report: 20 +20%
- Final Examination: 40 %

Tool & Evaluation

Tests and attendance are permanent tools & assessment, in addition to the activity file which contains curricular and the co-curricular 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	24/3/2019	20
2 nd Exam	5/5/2019	20
Assignments and Attendance	Students should be notified about their marks	20
Final Exam	2/6 - 5/6/2019	40

Activities and Instructional Assignment

- 1- Practical assignments to achieve the syllabus objectives.
- 2- Group Activity and demonstrations.

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. Allowed Absence percentages is (15%).

References :

1.ASTM C109 / C109M - 16a Standard Test Method for Compressive Strength

2. ASTM C143 in the United States, IS: 1199 – 1959 in India and EN 12350-2 in Europe.

3. http://www2.cement.org/PW2015/EB001_15-Presentations/

4. <http://civilblog.org/2013/05/10/compressive-strength-test-of-concrete-is516-1959/>

5. <https://www.iea.org/publications/freepublications/publication/Cement.pdf>

6. <https://igitgeotech.files.wordpress.com/2014/10/properties-of-concrete-by-a-m-neville.pdf>

Syllabus Classification

Objectives	Learning outcome	Assessment tools
• Introduction	<i>Report Writing</i>	<i>By using solved problems. Power point and weight board.</i>
• Consistency	<i>Normal Consistency & Setting Time of Cement Paste.</i>	<i>By using solved problems. Power point and weight board.</i>
• Mortar	<i>Fresh and Mechanical Properties</i>	<i>By using solved problems. Power point and weight board.</i>
• Aggregate	<i>Unit Weight of Aggregate and Abrasion test of Aggregate</i>	<i>By using solved problems. Power point and weight board.</i>
• Concrete	<i>Fresh and Mechanical Properties</i>	<i>By using solved problems. Power point and weight board.</i>
• Steel and wood	<i>Mechanical Properties</i>	<i>By using solved problems. Power point and weight board.</i>

