

Ahsanullah University of Science and Technology
Department of Civil Engineering
Course Number: CE 212 (1.5 Credit Hrs/week)
Course Title: Mechanics of Solids Sessional
FALL SEMESTER 2017

LEARNING OBJECTIVES

The course is to learn concepts from strength of materials such as analysis of material properties based on tension, compression, hardness, bending, buckling, direct shear, impact, torsion, behavior of spring etc practically. Students can learn variety of engineering and structural materials and their mechanical and engineering properties, different testing procedure and testing standards, testing equipment, materials stress-strain behavior and failure patterns, types of materials based on characterization, report writing process and evaluation of the experimental results and so on. In civil engineering profession, the use of structural behavior and understanding the quality of product will be discussed in this course. Experimental data analysis techniques and graph formation are also discussed to help the students to prepare and evaluate results.

TEXT BOOK

1. Mechanics of Solids Sessional Lab Manual

REFERENCE BOOK/MANUALS/CODES

1. Dr. Ishtiaque Ahmed, Mechanics of Solids Sessional Manual, Department of Civil Engineering, Bangladesh University of Engineering and Technology (BUET).
2. Md. Ruhul Amin, Mechanics of Solids Sessional Manual, Department of Civil Engineering, Bangladesh University of Engineering and Technology (BUET).
3. ASTM E8 / E8M, ASTM A370-17, ASTM A48 / A48M, ASTM E18, ASTM D143, ASTM A370, ASTM E 23, Standard Test Methods for Notched Bar Impact Testing of Metallic Materials, ASTM International, West Conshohocken, PA, 2017, www.astm.org.

Class Schedule for Fall'2017 (1.5 Cr. Hr.)

| Week | Topics |
|-------------|--|
| 01 | Introductory class (course material distribution, discussion on marks distribution, report preparation, laboratory rules and regulations etc.) |
| 02 | Hardness test of metal specimens |
| 03 | Compression test of timber block |
| 04 | Static bending test of timber beam |
| 05 | Test of helical spring |
| 06 | Direct shear test of metal specimen |
| 07 | Test of slender column Mid Term Quiz. |
| 08 | Impact tests of metal specimens |
| 09 | Tension tests of mild steel |
| 10 | Basics of shear force and bending moment in beam, Basics of shear centre |
| 11 | Final quiz, Viva and Report submission. |
| 12 | Viva |
| 13 | |

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