# MECHANICAL ENGINEERING DEPARTMENT LAB MANUAL

# Material Testing Lab (Subject Code: KME 352)

# List of Experiments:

#### Objectives:

- To understand the principles and performance characteristics different materials.
- To know about material properties.

 Strength test of a given mild steel specimen on UTM with full details and stress versus strain plot on the machine.

2. Other tests such as shear, bend tests on UTM.

3. Impact test on impact testing machine like Charpy, Izod or both.

4. Hardness test of given specimen using Rockwell and Vickers/Brinell testing machines.

Spring index test on spring testing machine.

6. Fatigue test on fatigue testing machine.

7. Creep test on creep testing machine.

 Experiment on deflection of beam, comparison of actual measurement of deflection with dial gauge to the calculated one, and or evaluation of young's modulus of beam.

9. Torsion test of a rod using torsion testing machine.

10.Study of NDT (non-destructive testing) methods like magnetic flaw detector, ultrasonic flaw detector, eddy current testing machine, dye penetrant tests.

Course Outcomes: The students who have undergone the course will be able to measure various properties of materials.

#### Experiment 1 (Tensile Test)

# **Material Testing Lab Manual For Mechanical Engineering**

**TD Snyder** 

# **Material Testing Lab Manual For Mechanical Engineering:**

**Testing Materials** Frederick A. Stearns, 1953 Insulation Materials, Testing and Applications, 4th Volume André O. Desjarlais, Robert R. Zarr, 2002 Engineering World ,1905 Handbook of Materials Selection Myer Kutz, 2002-07-22 An innovative resource for materials properties their evaluation and industrial applications The Handbook of Materials Selection provides information and insight that can be employed in any discipline or industry to exploit the full range of materials in use today metals plastics ceramics and composites This comprehensive organization of the materials selection process includes analytical approaches to materials selection and extensive information about materials available in the marketplace sources of properties data procurement and data management properties testing procedures and equipment analysis of failure modes manufacturing processes and assembly techniques and applications Throughout the handbook an international roster of contributors with a broad range of experience conveys practical knowledge about materials and illustrates in detail how they are used in a wide variety of industries With more than 100 photographs of equipment and applications as well as hundreds of graphs charts and tables the Handbook of Materials Selection is a valuable reference for practicing engineers and designers procurement and data managers as well as teachers and students Manual of the Public Instruction Acts and Regulations of the Council of Public Instruction of Nova Scotia, 1911

**Confidential Documents** United States. Army Air Forces, 1944 Journal of Educational Modules for Materials Applied Mechanics Reviews .1952 Science and Engineering Charles Allen Wert, 1980 **British Books in Print**, 1965 Board of Contract Appeals Decisions United States, Armed Services Board of Contract Appeals, 1977 The full texts of Armed Services and othr Boards of Contract Appeals decisions on contracts appeals The Reference Catalogue of **Current Literature**. Management .1989 **Energy Research Abstracts** .1988 **Engineering Record, Building Record and Sanitary Engineer** Henry Coddington Meyer, Charles Frederick Wingate, 1912 Solar Energy Update ,1982 Collier's Encylopedia ,1967 U.S. Government Research Reports ,1964 **Novel Applications of Carbon** Based Nano-materials Swamini Chopra, Kavita Pande, Vincent Shantha Kumar, Jitendra A. Sharma, 2022-11-03 There s

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Scientific and Technical Aerospace Reports ,1995-05

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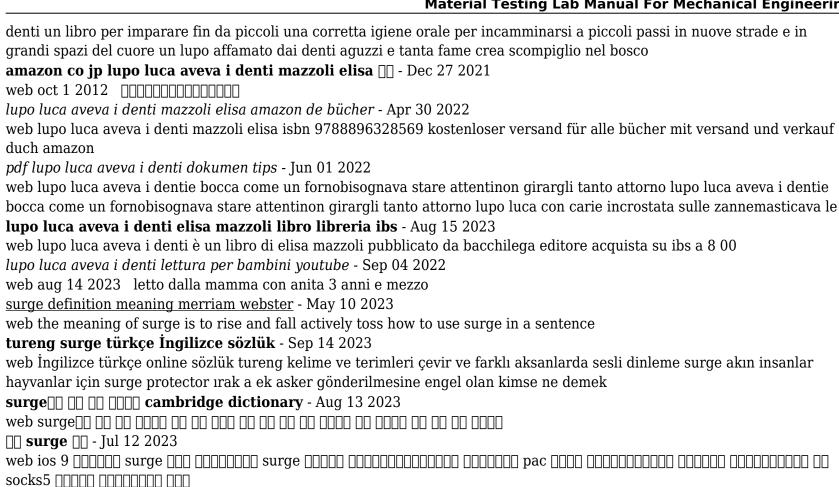
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