DEPARTMENT OF CIVIL ENGINEERING
STRUCTURAL ANALYSIS LABORATORY
COLLEGE OF TECHNOLOGY
Sardar Vallabhbhai Patel University of Agriculture & Technology Meerut 250110 (UP)
List of Equipment's

S. No.	Name of Equipment	Technical Specification	Figure of Equipment/Model/Device
01	Elastic Properties of Deflected Beam Apparatus	Apparatus consists of a mild steel beam 2.5cm x 3mm in cross section and 100cm long, pinned to two supports 70 cm apart situated symmetrically. One of the ends can be fixed or given a known slope by applying a known moment at the end with the help of suspended loads. At the other end also, a known moment can be applied. Vertical loads can be applied at various points along the span of the beam. Apparatus is supplied complete with a supporting stand.	

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02	Apparatus for Verification of Clerk's Maxwell Reciprocal Theorem	Apparatus consists of a beam 100cm long and 2.50cm x 4mm in cross section with graduations at every 5 cm along the length. It is supported on two knife edge supports 70cm apart with a 30cm overhang on one side. Reciprocal theorem can be verified by direct measurements of the deflections of various points with the help of a LVDT, due to a load placed at the reciprocal points. A LVDT with 25mm travel (with a magnetic base) and one load cell of 10 Kg. Capacity with a digital Indicator is supplied with the apparatus. Thus, no extra weight set is required. Apparatus is supplied complete with a supporting stand	
03	Three Hinged Arch Apparatus	The model has a span of 100cm and rise 25cm, with hinges at supports and crown. One of the ends rests on rollers. Along the horizontal span of the arch various points are marked at equidistant for the application of load. This being a statically determinate structure, the horizontal thrust developed under the action of any load system can be theoretically calculated and will also be measured directly by digital Indicator. Apparatus is supplied complete with a supporting stand. A Load Cell of 10 Kg. capacity with a digital Indicator is supplied with the apparatus. Thus, no extra weight set is required	

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04	Two Hinged Arch Apparatus	The model has a span of 100cm and rise 25cm. Both ends are hinged but one of the ends is also free to move longitudinally. A Load Cell of 10 Kg. capacity is fitted at this end for the application of known horizontal inward force for measuring the horizontal thrust. Along the horizontal span of the arch various points are marked at equidistant for the application of load. A LVDT with 25mm travel (with magnetic base) is supplied with the apparatus. Two Load Cell 10 Kg. capacity i.e. one for measuring horizontal thrust and for applying load. Thus, no extra weight set is required. A digital Indicator is supplied with the apparatus.	
05	Curved Member Apparatus	Apparatus consists of a steel bar which is used to make the different curved members Viz. circle, semicircle with straight arm, a quadrant of a circle and quadrant of a circle with straight arm. The bottom ends of the members are fixed to the base. Under the application of load at free end, its horizontal and vertical deflection is measured with the help of LVDT's. Two Dial gauge with 25mm travel (with a magnetic base) and a set of dead weights. Apparatus is supplied complete with a supporting stand.	

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06	Redundant Joint Apparatus	Apparatus consists of three suspension members (spring balances) of different stiffness which are jointed at a point to form the redundant joint. The upper end of the suspension members being tied in a position to a vertical wooden board. Arrangement is provided to apply a vertical load at the joint and to measure its horizontal and vertical displacement on a paper and also elongations and forces in the suspension members by the help of dial gauges. Apparatus is supplied complete with a supporting stand. Two dial gauge with 25 mm trevel (with magnetic base) with a set of weights is supplied.	
07	Behaviour of Column and Struts Apparatus	Apparatus consists of spring steel column which are put along a vertical M.S structure. Different end conditions as below can be applied to the column: 1. Both ends pinned 2. Both ends fixed 3. One end pinned and other fixed One end fixed and other end free.	

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08	Unsymmetrical Bending Apparatus	Apparatus consists of an angle of size 1" x 1" x 1/8" or in equivalent metric units of length 80cm is tied as a cantilever beam. The beam is fixed at one end such that the rotation of 450 intervals can be given and clamped such that the principal axis of its cross-section may be inclined at any angle with the horizontal and vertical planes. Also arrangement is provided to apply vertical load at the free end of the cantilever and to measure horizontal and vertical deflection of the free end. Apparatus is supplied complete with a supporting stand	
09	Portal Frame Apparatus	Portal Frame is made up of M.S. Plate of rectangular section of 8 mm thick x 40 mm wide. Frame is provided with a provision to achieve different end condition viz. Hinged, roller and fixed. The size of portal will be 40 cm x 60 cm. Portal is also having a provision for horizontal loading at different positions. Apparatus is supplied complete with a supporting stand.	

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10	Elastically Coupled Beam Apparatus	Apparatus consists of a three parallel bar suspension system with elastic beam at their upper and lower ends. The upper ends of the two outer suspension rods are tied to a vertical frame while central suspension rod may by tied to the center of another elastic beam supported at two outer ends only. Two load cell of 10 Kg. Capacity for applying load with a digital Indicator is supplied with the apparatus. Thus, no extra weight set is required.	
11	Deflection of Truss Apparatus	Apparatus consists of 4 panels of a PARTT truss, each panel being 40 cm in horizontal direction and 30 cm in vertical direction. Load can be applied on each panel point. All tension members are provided with detachable springs so as to obtain appreciable deformation of the member. Three dial gauges of 25 mm trevel (With magnetic base) with a set of dead weights is supplied. Apparatus is supplied complete with a supporting stand.