ENDS 231

ARCHITECTURAL STRUCTURES I

LECTURE NOTE SET Fall 2007



by

Anne Nichols

Assistant Professor
Department of Architecture
A413 Langford
Texas A&M University
College Station, TX 77843-3137
(979) 845-6540
fax: (979) 862-1571
http://archone.tamu.edu/faculty/anichols
anichols@tamu.edu

TABLE OF CONTENTS

Syllabus

Student Understandings
List of Symbol Definitions
The Deacon's Masterpiece
Note Set 1.1 Math for Structures I
Note Set 1.2 Numerical Computations
Note Set 1.3 Problem Solving, Units and Numerical Accuracy
Note Set 2Forces and Vectors
Note Set 3Moments
Note Set 4 Equilibrium of a Particle
Note Set 5 Equilibrium of Rigid Bodies
Note Set 6 Truss Structures
Note Set 8 Truss Analysis Using Multiframe4D
Note Set 9Pinned Frames and Arches
Note Set $10 \dots Loads$ – Tracing, Concentrated and Distributed
Note Set 11Centers of Gravity - Centroids
Note Set 12 Moments of Inertia
Note Set 13Beam Structures and Internal Forces
Note Set 14Beam Analysis Using Multiframe4D
Note Set 15 Mechanics of Materials
Note Set 16Stress and Strain – Elasticity
Note Set 17Torsion, Thermal Effects and Indeterminacy
Note Set 18Beam Bending Stresses and Shear Stress
Note Set 21Beam Design and Deflections
Note Set 22 Steel– AISC Load and Resistance Factor Design
Note Set 23Columns and Stability
Note Set 24Steel & Wood Column Design
Note Set 25Column Design – Centric & Eccentric Loading
Note Set 26Connections and Tension Member Design
Note Set 27.1 Rigid and Braced Frames
Note Set 27.2 Frame Analysis Using Multiframe4D
Note Set 28System Selection and Design