CEE212 – Solid and Structural Mechanics (3 Credits)
Winter Semester 2014-2015
Course Outline

Date	Class	Title
1/14	1	Principles of Statics
1/16	2	Stress on Solids
1/16	3	Shear Stress and Allowable Stress Design*
1/21	4	Strain in Solids
1/23	5	Introduction to Material Properties
1/23	6	Stress-Strain of Different Materials*
1/26	7	Material Strain Energy and Poisson's Ratio
1/28	8	Introduction to Axial Members
1/30	9	Indeterminate Axial Members
2/2	10	Stress Concentrations
2/4	11	Introduction to Torsion Members
2/6	12	Behavior of Rod and Shafts in Torsion
2/9	13	Plastic Response of Torsion Members
2/11	14	Introduction to Bending
2/13	15	Drawing Shear and Moment Diagrams Quickly
2/16	16	Flexural Properties of Beams
2/18	17	Unsymmetric Beams
2/20	-	*MIDTERM #1*
2/23	18	Composite Beams Including R/C Flexural Elements
2/25	19	Stress Behavior in Beams - Elastic and Plastic
2/27	20	Introduction to Transverse Shear
3/9	21	Shear Stress in Bending Beams
3/11	22	Concept of Shear Flow in Built-up Sections*
3/13	23	Shear Flow in Thin Walled Elements and Shear Center
3/16	24	Combined Loadings and Resulting Stress
3/18	25	Plane Stress Transformation
3/20	26	Principal Stresses
3/23	-	*MIDTERM #2*
3/25	27	Introduction to Mohr's Circle*
3/27	28	Stress Variations in Beam & Maximum Shear*
3/30	29	Introduction to Bending Beams
4/1	30	Beam Displacement - Integration and Moment Area Method
4/3	31	Statically Indeterminate Beams
4/6	32	Introduction to Columns
4/8	33	Euler's Formula for Slender Columns
4/10	34	The Secant Formula
4/13	35	Introduction to Energy Methods
4/15	36	Strain Energy of Loaded Elements
4/17	37	Impact Loading by Energy Methods
4/20	38	Principle of Virtual Work

*Online Video (http://leccap.engin.umich.edu/leccap/site/g8tw6rnknhjwc78tmeh)