

## Theory of Plates and Shells (Instructed in English)

**Semester:** Fall 2015

**Class:** Graduate

**Instructor:** Professor Hsuan-Teh Hu

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**Teaching Assistant:** Chi Yang (Room 47452, Civil Engineering Building).

**Textbook:** Hu, H.-T., Theory of Plates, 2015.

Ugural, A. C., Stresses in Plates and Shells, 2nd Edition, McGraw-Hill, 1999.

**Prerequisite:** Mechanics of Materials, Partial Differential Equations, Fourier Series.

### **Course Outline:**

Chapter 1 Governing Equations for Thin Plates with Small Deflection

Chapter 2 Laterally Loaded Rectangular Plates

Chapter 3 Circular Plates

Chapter 4 Approximate Methods for Solution of Plate Problems

Chapter 5 Plates under Combined Lateral and In-Plane Loads

Chapter 6 Membrane Theory for Shells of Revolution

Chapter 7 Bending Theory for Shells of Revolution

### **Grading:**

Homework		25%
Midterm Exam I (Chapters 1, 2)	October 22	25%
Midterm Exam II (Chapters 3, 4)	December 3	25%
Final Exam (Chapters 5, 6, 7)	January 7	25%

### **Recommended References:**

Jarad, M. H., Theory and Design of Plate and Shell Structures, Chapman & Hall, 1994.

Mansfield, E. H., The Bending & Stretching of Plates, 2nd Edition, Cambridge University Press, 1989.

Reismann, H., Elastic Plates, Theory and Application, Wiley, 1988.

Timoshenko, S. P. and Woinowsky-Krieger, S., Theory of Plates and Shells, McGraw-Hill, 1959.

Szilard, R., Theories and Applications of Plate Analysis: Classical, Numerical and Engineering Methods, Wiley, 2004.