

Structural Mechanics in Nuclear Power Technology

(1.56J, 2.084J, 13.14J, 22.314J)

OUTLINE

(Approximate Number of Hours of Lectures in Parentheses)

I. Introduction (2)

- A. Power Plant Description
- B. Varieties/Population
- C. Integrated Approach
- D. Design and Methods Viewpoint

II. Reactor Pressure Vessels (9)

- A. Description
- B. Stress Analysis
- C. Design Limits and Margins
- D. Brittle Fracture

III. Near-Reaction Structures

- A. Fusion Reactor First Walls (1)
 - 1. Physical Description
 - 2. Illustrative Problem
 - 3. Stresses and Deformations
 - 4. Design Use
- B. Oxide Fuel Rods (5)
 - 1. Physical Description
 - 2. Elastic Analysis
 - 3. Creep and Plasticity
 - 4. Other Features

IV. Support Structures (3)

- A. Core Mechanical Design
- B. Beam Equations
- C. Discussion of Terms
- D. Applications

V. Plant Components (3)

VI. Containment Structures (5)