

AsE/EM Doctoral Qualifying Exam Topics in Solids and Structural Mechanics
(rev. of Nov. 2002)

Numbers in parentheses correspond to the course numbers in which the topics are covered. Courses cited are AEEM 681 and EGFD 601, 701, 702, and 705.

1. Tensor Algebra and Calculus (701)
2. Principles of Stress (701,702)
3. Kinematics of Deformation and Motion, Compatibility (701,702)
4. Fundamental Laws and Equations of Continuum Mechanics (701)
5. Linear Elasticity and Initial Yield Criteria (681, 601, 702)
6. "Exact" Elasticity Solutions (601,702)
7. Plane Stress, Plane Strain, Solution of Problems (601,702)
8. Torsion of Thin Wall Structures (601)
9. Beams on Elastic Foundation (601)
10. Rotating Discs (601)
11. Virtual Work and Applications (Beams, Trusses and Frames) (681,705)
12. Castigliano's Theorem, Energy Principles and Theorems (681, 705)