**MS in Civil and Environmental Engineering (Structural Specialization)**

A MS degree is comprised of 45 units of 400/500 level coursework. The following is a list of potential courses that can be taken to satisfy the unit requirements for students who want to specialize in structural engineering.

**Core Courses**
- CE 401 Advanced Mechanics of Materials
- CE/ME 404 Applied Finite Element Analysis
- CE405 Concrete Materials
- CE 407 Structural Dynamics
- CE 454 Structural Design
- CE455Design of Timber Structures
- CE 457 Bridge Engineering
- CE 458 Fiber Reinforced Polymer (FRP) Design / CE 558 Advanced Fiber Reinforced Polymer (FRP) Design
- CE 501 Advanced Matrix Analysis of Structures I
- CE 502 Advanced Matrix Analysis of Structures II
- CE/ME 504 Finite Element Analysis I
- CE/ME 505 Finite Element Analysis II
- CE 511/ME 501 Continuum Mechanics and Linear Elasticity
- CE 513/ME 503 Inelastic Stress Analysis
- CE 552 Analysis and Seismic Design of Reinforced Concrete
- CE 557 Seismic Analysis and Design for Civil Engineers
- CE 559 Prestressed Concrete Design

**Related Courses**
- BRAE 446 CAD Software for Land Modeling
- CE 481 Shallow Foundation Analysis and Design
- CE 488 Engineering Risk Analysis
- CE 583 Geotechnical Earthquake Engineering
- CE 584 Lateral Support Systems
- CE 586 Deep Foundation Analysis and Design
- ME 401 Stress Analysis

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1. CE 456 Seismic Principles for Civil and Environmental Engineers should **NOT** be taken by graduate students emphasizing structures; instead, CE 407 and CE 557 should be taken.
2. Course credit may not be received for CE 458 and CE 558; graduate students should take CE 558. CE 458 shall count for graduate students if the course was taken while enrolled as an undergraduate.
3. Course credit may not be received for CE 459 and CE 556; graduate students should take CE 556. CE 459 shall count for graduate students if the course was taken while enrolled as an undergraduate.