The following Civil Engineering (CVEN) courses are available for Ph.D. students in Materials Engineering. Coursework included in the Degree Plan must be approved by the degree candidate’s advisory committee.

### CVEN Courses in Materials Engineering

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Frequency Offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>CVEN 613</td>
<td>Micromechanics of Civil Engineering Materials</td>
<td>Every Third Semester</td>
</tr>
<tr>
<td>CVEN 614</td>
<td>Stabilization of Soil-Aggregate Systems</td>
<td>Every Third Semester</td>
</tr>
<tr>
<td>CVEN 615</td>
<td>Structural Design of Pavements</td>
<td>Annually</td>
</tr>
<tr>
<td>CVEN 616</td>
<td>Systems Design of Pavements</td>
<td>Every Third Semester</td>
</tr>
<tr>
<td>CVEN 622</td>
<td>Properties of Concrete</td>
<td>Every Third Semester</td>
</tr>
<tr>
<td>CVEN 624</td>
<td>Infrastructure Engineering</td>
<td>Annually</td>
</tr>
<tr>
<td>CVEN 637</td>
<td>Rigid Pavement Analysis and Design</td>
<td>Every Third Semester</td>
</tr>
<tr>
<td>CVEN 653</td>
<td>Bituminous Materials</td>
<td>Annually</td>
</tr>
<tr>
<td>CVEN 681</td>
<td>Seminar in Materials</td>
<td>Annually</td>
</tr>
<tr>
<td>CVEN 689</td>
<td>New 689 courses covering in-depth topics such as Aggregates and Concrete Microstructure, Behavior, &amp; Restoration have been added. Please see advisor for a complete list of 689 courses.</td>
<td>Annually</td>
</tr>
</tbody>
</table>

### Other CVEN Courses

- CVEN 633 - Advanced Mechanics of Materials
- CVEN 635 - Street and Highway Design
- CVEN 641 - Construction Engineering Systems
- CVEN 643 - Advanced Construction Methods
- CVEN 646 - Foundations for Expansive Soils
- CVEN 647 - Numerical Methods in Geotechnical Engineering
- CVEN 649 - Physical and Engineering Properties of Soil
- CVEN 651 - Geomechanics
- CVEN 658 - Civil Engineering Applications of GIS
- CVEN 661 - Research Methods for Civil Engineers
- CVEN 662 - Experimental Methods in Civil Engineering

### Courses Outside CVEN

- **Agronomy**
  - AGRO 626 - Soil Mineralogy

- **Geology**
  - Relevant GEOL courses

- **Mechanics and Materials**
  - MEMA 646 - Introduction to the Finite Element Method
  - MEMA 651 - Viscoelasticity of Solids and Structures
  - MEMA 601 - Theory of Elasticity
  - MEMA 602 - Continuum Mechanics
  - MEMA 611 - Fundamentals of Engineering Fracture Mechanics
  - Other relevant MEMA courses with the necessary prerequisites

- **Statistics**
  - STAT 601 - Statistical Analysis
  - STAT 602 - Statistical Methods of Regression Analysis
  - STAT 658 - Transportation Statistics
  - Other relevant STAT courses

### Contact Information

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