# Data Engineering Concentration

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>CSC 366</td>
<td>Database Modeling, Design and Implementation</td>
<td>4</td>
</tr>
<tr>
<td>CSC 436</td>
<td>Mobile Application Development</td>
<td>4</td>
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<tr>
<td>or CSC 437</td>
<td>Dynamic Web Development</td>
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<tr>
<td>or CSC 309</td>
<td>Software Engineering II</td>
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<tr>
<td>CSC 466</td>
<td>Knowledge Discovery from Data</td>
<td>4</td>
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<tr>
<td>CSC 468</td>
<td>Database Management Systems Implementation</td>
<td>4</td>
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<tr>
<td>or CSC 469</td>
<td>Distributed Systems</td>
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Select from the following: 1

- CPE/EE 428  Computer Vision
- CSC 369  Introduction to Distributed Computing
- CSC 400  Special Problems 2
- CSC 468  Database Management Systems Implementation
- CSC/CPE 469  Distributed Systems
- CSC 480  Artificial Intelligence
- CSC 482  Speech and Language Processing
- CSC 487  Deep Learning
- CSC 560  Database Systems
- CSC 566  Topics in Advanced Data Mining
- CSC 569  Distributed Computing

### Mathematics/Statistics Elective

Select from the following: 4

- MATH 241  Calculus IV
- MATH 248  Methods of Proof in Mathematics
- MATH 306  Linear Algebra II
- MATH 334  Combinatorial Math
- MATH 335  Graph Theory
- MATH 437  Game Theory
- MATH 470  Selected Advanced Topics
- STAT 305  Introduction to Probability and Simulation
- STAT 323  Design and Analysis of Experiments I
- STAT 324  Applied Regression Analysis
- STAT 330  Statistical Computing with SAS
- STAT 331  Statistical Computing with R
- STAT 334  Applied Linear Models
- STAT 416  Statistical Analysis of Time Series
- STAT 418  Categorical Data Analysis
- STAT 419  Applied Multivariate Statistics
- STAT 434  Statistical Learning: Methods and Applications

**Total units**: 24

1. An additional 4 units of CPE/CSC Technical Electives is needed if CPE/CSC 123 is not taken in the major.
2. Up to 4 units may be taken from CSC 400.