# DATA ENGINEERING CONCENTRATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
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<tbody>
<tr>
<td>CSC 366</td>
<td>Database Modeling, Design and Implementation</td>
<td>4</td>
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<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:  
- CPE/EE 428 Computer Vision  
- CSC 369 Introduction to Distributed Computing  
- CSC 400 Special Problems  
- 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:  
- 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.