MASTER OF SCIENCE IN THE FIELD OF DATA SCIENCE

Data science, and the associated areas referred to as big data and data analytics, is a rapidly emerging technology field fueled by the dramatic growth in the amount of data being produced in most areas of society. The master of science in data science degree program allows students to study fundamental ideas that underlie the process of using data for problem solving and to apply the knowledge they gain to real-world scenarios. This is accomplished through elective coursework and partnerships with organizations in a variety of market areas, including health sciences, geography, cybersecurity, and public policy, to name a few.

REQUIREMENTS

Specific admission requirements are shown on the Graduate Program Finder. (http://www.gwu.edu/all-graduate-programs)

The following requirements must be fulfilled:

The general requirements stated under Columbian College of Arts and Sciences, Graduate Programs (http://bulletin.gwu.edu/arts-sciences/#degreeregulationtext).

30 credits, including 24 credits in required courses and 6 credits in elective courses.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Required</strong></td>
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<tr>
<td>DATS 6101</td>
<td>Introduction to Data Science</td>
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<tr>
<td>DATS 6102</td>
<td>Data Warehousing</td>
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<tr>
<td>DATS 6103</td>
<td>Introduction to Data Mining</td>
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<tr>
<td>DATS 6501</td>
<td>Data Science Capstone</td>
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<tr>
<td>At least two of the following:</td>
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<tr>
<td>DATS 6201</td>
<td>Numerical Linear Algebra and Optimization</td>
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<tr>
<td>DATS 6202</td>
<td>Machine Learning I: Algorithm Analysis</td>
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<tr>
<td>MATH 6522</td>
<td>Introduction to Numerical Analysis</td>
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<tr>
<td>STAT 6201</td>
<td>Mathematical Statistics I</td>
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<tr>
<td>STAT 6207</td>
<td>Methods of Statistical Computing I</td>
<td></td>
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<tr>
<td>STAT 6210</td>
<td>Data Analysis</td>
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<tr>
<td>STAT 6214</td>
<td>Applied Linear Models</td>
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<tr>
<td>STAT 6216</td>
<td>Applied Multivariate Analysis II</td>
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<tr>
<td>STAT 6242</td>
<td>Modern Regression Analysis</td>
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<tr>
<th>Code</th>
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<tr>
<td>DATS 6203</td>
<td>Machine Learning II: Data Analysis</td>
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<tr>
<td>STAT 6202</td>
<td>Mathematical Statistics II</td>
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<tr>
<td>STAT 6223</td>
<td>Bayesian Statistics: Theory and Applications</td>
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<tr>
<td>STAT 6289</td>
<td>Topics in Statistics</td>
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**Electives**

At least two of the following:

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>DATS 6401</td>
<td>Visualization of Complex Data</td>
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<tr>
<td>DATS 6402</td>
<td>High Performance Computing and Parallel Computing</td>
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<td>DATS 6450</td>
<td>Topics in Data Science</td>
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<tr>
<td>ECON 8375</td>
<td>Econometrics I</td>
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<td>ECON 8376</td>
<td>Econometrics II</td>
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<td>ECON 8377</td>
<td>Econometrics III</td>
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<td>ECON 8378</td>
<td>Economic Forecasting</td>
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<td>GEOG 6304</td>
<td>Geographical Information Systems I</td>
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<td>GEOG 6307</td>
<td>Digital Image Processing</td>
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<td>PSC 8132</td>
<td>Network Analysis</td>
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<tr>
<td>PSC 8185</td>
<td>Topics in Empirical and Formal Political Analysis</td>
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