Certificate in Mathematical Foundations of Data Analytics

The graduate certificate in mathematical foundations of data analytics is designed to provide training in data analytics to individuals who are currently working, as well as current graduate students in mathematics, statistics, physics, engineering, etc.

Admission

New graduate students: Applicants to the Certificate in MFDA are required to meet Graduate School requirements for nondegree, Category A admission. The graduate certificate should be selected as the intended program in the Graduate School application.

Current WSU graduate students: To apply for the certificate program, submit the Graduate School’s Declaration of Intent to Pursue a Graduate Certificate form located on the Graduate School's webpage. With departmental approval, the student may then be admitted to the certificate program. All Graduate School and departmental admission requirements apply. International students may enroll in the certificate program but must ensure it complies with their visa requirements. Students should contact the office of graduate studies in mathematics to inform it of their intent to enroll in the program.

Program Requirements

The certificate in MFDA consists of 15 credit hours. Six (6) of the credit hours are composed of two required courses. The remaining 9 credit hours are satisfied by completing elective courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 746</td>
<td>Introduction to Data Analytics</td>
<td>3</td>
</tr>
<tr>
<td>MATH 802</td>
<td>Data Analytics Capstone</td>
<td>3</td>
</tr>
<tr>
<td>Electives</td>
<td>Select 9 credit hours from the following</td>
<td>9</td>
</tr>
<tr>
<td>MATH 553</td>
<td>Mathematical Models ¹</td>
<td></td>
</tr>
<tr>
<td>PHYS 730</td>
<td>Principles of Computer Modeling ¹</td>
<td></td>
</tr>
<tr>
<td>MATH 751</td>
<td>Numerical Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>STAT 763</td>
<td>Applied Regression Analysis</td>
<td></td>
</tr>
<tr>
<td>STAT 764</td>
<td>Analysis of Variance</td>
<td></td>
</tr>
<tr>
<td>STAT 774</td>
<td>Statistical Computing I</td>
<td></td>
</tr>
<tr>
<td>STAT 776</td>
<td>Applied Statistical Methods II</td>
<td></td>
</tr>
<tr>
<td>PHYS 816</td>
<td>Methods in Experimental Physics</td>
<td></td>
</tr>
</tbody>
</table>

Total Credit Hours 15

¹ Only one of these courses may be counted toward completion of the certificate program.

Applied Learning

Students in the certificate in mathematical foundations of data analytics program are required to complete an applied learning or research experience to graduate from the program. The requirement can be met by completing MATH 802 Data Analytics Capstone.

This course involves the student solving an open ended, real world data analysis problem using data from an actual company, or simulated data based on a real world problem. This is considered on the level of a master's thesis. Students may also use an internship to take the place of the capstone course as long as the hands on experience is deemed equivalent to that of a student completing the traditional capstone course.