

# DATA ANALYTICS CERTIFICATE

## McQuiad Hall, Room 212A

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www.shu.edu/academics/graduate-certificate-data-visualization-analysis.cfm (<http://www.shu.edu/academics/graduate-certificate-data-visualization-analysis.cfm>)

**Director:** Manfred Minimair, Ph.D.

The program is offered by the Department of Mathematics and Computer Science and the Department of Psychology.

This program provides the skills and knowledge that data analysts need to succeed. The students learn how to analyze and visualize complex data with industry-standard applications, including Tableau, and programming languages such as R and Python. The program trains the students to communicate information clearly and effectively through graphic depictions that stimulate and encourage viewer engagement. The students practice preparing real-world data for storing in databases, analyzing data with statistics and machine-learning tools, and using visualization to explore data and present findings. The program is an online program. Students are not required to be present on campus.

## Prerequisites

- Minimum undergraduate GPA: 2.75
- Graduate admission to Seton Hall University

## Credits for Graduate Programs

The graduate certificate provides credits for two graduate programs in the College of Arts and Sciences, M.S. in Data Science and Masters in Public Administration. Nine credits count equally for all programs and the remaining credits depend on the statistics course.

- **M.S. in Data Science:** total of 12 credits towards the curriculum if DASC 6811 Statistics for Data Science is taken
- **Masters in Public Administration:** total of 12 credits towards the curriculum if PSMA 6002 Research Methods-Stat Analy or DASC 6811 Statistics for Data Science is taken

## Graduate Curriculum: Certificate in Data Analytics

The updated curriculum consists of three required courses (9 credits) and one elective course (3 credits). The program is 100% online.

| Code                               | Title  | Hours |
|------------------------------------|--|-------|
| <b>Required Courses</b>            |  |       |
| Select three courses of following: |  | 9     |
| DASC 7000                          | Data Visualization   |       |
| DASC 6010                          | Data Mining  |       |
|                                    | Statistics   |       |
| PSMA 6002                          | Research Methods-Stat Analy                                    |       |
| DASC 6811                          | Statistics for Data Science *                                  |       |
| BIOL 6113                          | Biostatistics  |       |
| GMHS 7500 & GMHS 7508              | Interm Statistical Methods I and Interm Statistical Methods II |       |
| HCAD 6002                          | Res Methods and Stat Analysis                                  |       |

PSYC 6100 Res Design and Analy I  
& PSYC 6200 and Res Design and Analy II \*\*

| <b>Elective Course</b>               |                                |           |
|--------------------------------------|--------------------------------|-----------|
| Select one of the following courses: |                                | 3         |
| DASC 7111                            | Text Mining                    |           |
| DASC 8211                            | Machine Learning ***           |           |
| PSMA 7800                            | Ethical Challenges of Big Data |           |
| PSYC 7214                            | Cognition for Visualization    |           |
| <b>Total Hours</b>                   |                                | <b>12</b> |

\* For students who demonstrate the required competencies from undergraduate Calculus 1 and 2 and Statistics.

\*\* For majors with these courses

\*\*\* For students who meet three conditions:

1. have earned at least a B- in DASC 6010 Data Mining,
2. have passed an undergraduate statistics course or have earned at least a B- in one of the required graduate statistics courses, and
3. have passed undergraduate Calculus I or demonstrate the required skills