DATA SCIENCE (MS)

The program provides students with the skills and knowledge to be successful in a data science career. At the end of program, graduates have the skills to analyze large datasets and to develop modeling solutions to support decision-making, a good understanding of the fundamental principles of marketing and customer relationship management, and communication skills to present results effectively to a non-technical business audience.

Concentrations

Computational Methods Concentration
The Computational Methods concentration addresses the increasing demand of data scientist with strong technical knowledge and skills to manage and extract information from massive amounts of data. This concentration is recommended for students who are interested in the more technical aspects of data science.

Health Care Concentration
The Health Care concentration addresses the increasing need of data scientists responsible for gathering, integrating, analyzing and presenting health care data. Students will learn analytics methods to support clinical decision systems, to improve patients’ outcomes and patients’ experience, and to improve clinical care and costs.

Hospitality Concentration
The Hospitality concentration addresses the increasing demand of data scientists that combine the skills to extract information from massive amounts of data with the competency in hospitality revenue analytics and optimization. The focus of this concentration is to teach students the analytics needs and challenges of the hospitality and tourism industry.

Marketing Concentration
Students take courses in multivariate statistics, advanced data mining and machine learning together with courses in marketing analytics and customer relationship management to gain a deep understanding of the challenges and goals of business applications.

Program Requirements

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<th>Program Requirements</th>
<th>Quarter Hours</th>
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<tr>
<td>Introductory Courses</td>
<td>0-12</td>
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<tr>
<td>Degree Requirements</td>
<td>52</td>
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<tr>
<td>Total hours required</td>
<td>52-64</td>
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Learning Outcomes

Students will be able to:

- Explain how data is represented for analytic applications.
- Select and apply techniques for data preparation including normalization and reduction.
- Develop and evaluate predictive models.
- Perform an independent data science investigation, from data gathering and cleaning to application of data mining algorithms to interpretation of results.

Degree Requirements

Course Requirements
No Introductory Course may be substituted for any other course at any level.

Introductory, Foundation, Advanced, and Elective course selections are determined by the concentration chosen.

Introductory Courses
Introductory courses may be waived for any of the following conditions:

- The student has the appropriate course work to satisfy an Introductory Course.
- The student has appropriate and verified professional experience to satisfy an Introductory Course.
- If an exam is available, the student passes a Graduate Assessment Examination (GAE) in the Introductory Course area.

Degree Requirements
Students in this degree program must meet the following requirements:

- Complete a minimum of 52 graduate credit hours in addition to any required introductory courses of the designated degree program.
- Complete all graduate courses and requirements listed in the designated degree program.
- Earn a grade of C- or better in all courses of the designated degree program.
- Maintain a cumulative GPA of 2.5 or higher.
- Students pursuing a second (or more) graduate degree may not double count or retake any course that applied toward the completion of a prior graduate degree. If a required course in the second degree was already completed and applied toward a previous degree, the student must meet with a faculty advisor to discuss a new course to be completed and substituted in the new degree. This rule also applies to cross-listed courses, which are considered to be the same course but offered under different subjects.
- Students pursuing a second master’s degree must complete a minimum of 52 graduate credit hours beyond their first designated degree program in addition to any required introductory courses in their second designated degree program.

Students with a GPA of 3.9 or higher will graduate with distinction.

Concentration Requirements

Concentrations, tracks and specializations provide focus to the degree. In addition to any degree requirements, students are required to choose one of the following:

- Computational Methods Concentration, Data Science (MS) (https://catalog.depaul.edu/programs/data-science-ms/computational-methods-concentration-data-science-ms/)
- Health Care Concentration, Data Science (MS) (https://catalog.depaul.edu/programs/data-science-ms/health-care-concentration-data-science-ms/)
- Hospitality Concentration, Data Science (MS) (https://catalog.depaul.edu/programs/data-science-ms/hospitality-concentration-data-science-ms/)
• Marketing Concentration, Data Science (MS) (https://catalog.depaul.edu/programs/data-science-ms/marketing-concentration-data-science-ms/)