DATA ANALYTICS CERTIFICATE

Department of Information Systems and Quantitative Analysis, College of Information Science & Technology

Vision Statement
Data analytics uses a variety of techniques to examine large amounts of data to discover patterns that can lead to business insights. Data analytics has broad applicability in customer behavior analysis, fraud detection, scientific inquiry, process improvement, financial analysis, trend analysis, forecasting, and decision-making. Techniques may include statistical methods, data mining, modeling and simulation, and data visualization. The certificate is designed to equip students to apply the theory and practice of data analytics to solving problems in a variety of economic, social, and scientific domains.

Program Contact Information
Martina Greiner, PhD, Graduate Program Chair (GPC)
282B Peter Kiewit Institute (PKI)
402.554.2174
mgreiner@unomaha.edu

Program Website (https://www.unomaha.edu/college-of-information-science-and-technology/information-systems-and-quantitative-analysis/graduate/graduate-certificates.php)

Admissions
General Application Requirements and Admission Criteria (http://catalog.unomaha.edu/graduate/admission/)

Program-Specific Requirements
Application Deadlines (Spring 2022, Summer 2022, and Fall 2022)
- Fall: July 1
- Spring: December 1
- Summer: April 1

Other Requirements
- The minimum undergraduate grade point average requirement for the data analytics certificate program is 3.0 or equivalent on a 4.0 scale. Applicants should have the equivalent of a four-year undergraduate degree.
- English Language Proficiency: Applicants are required to have a command of oral and written English. Those who do not hold a baccalaureate or other advanced degree from the United States, OR a baccalaureate or other advanced degree from a predetermined country on the waiver list (https://www.unomaha.edu/graduate-studies/prospective-students/Proof%20of%20English%20Proficiency-%20International.pdf), must meet the minimum language proficiency score requirement in order to be considered for admission.
  - Resume: Submit a detailed resume indicating your work experience and background.
- Applicants with International Transcripts: Any applicant to this program who has completed undergraduate or graduate coursework at an international higher education institution outside of the United States may submit transcripts and degree certificates (with an English translation) in lieu of a course-by-course transcript evaluation from World Education Services (https://www.wes.org/) (WES), Educational Credential Evaluators (https://www.ece.org/) (ECE), or Educational Perspectives (https://www.edperspective.org/). This graduate program will conduct an in-house credential evaluation of your transcript(s).
  - UNO reserves the right to require a course-by-course evaluation from WES, ECE, or Educational Perspectives if the program is unable to complete an evaluation or should there be any questions or concerns about the documentation that is received. The applicant will be notified by the individual program if an external course-by-course evaluation is required.
  - *Note: If admitted, official transcripts and degree certificates (with an English translation)/official course-by-course transcript evaluation, and any applicable official exam scores are required.
  - OPTIONAL Statement of Purpose: Applicants may submit a statement of purpose with a maximum of 750 words that address:
    - why you want to study at UNO
    - career goals
    - relevant qualifications or work experience that demonstrate potential for success in the graduate program
    - motivations for pursuing graduate education

Degree Requirements

Prerequisite Requirements
The following courses are prerequisites for the required courses. Elective courses may have additional prerequisites. All prerequisites must be completed with grades of "B" or better.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISQA 8030</td>
<td>INFORMATION SYSTEMS AND ETHICS</td>
<td>3</td>
</tr>
<tr>
<td>or equivalent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CIST 2500</td>
<td>INTRODUCTION TO APPLIED STATISTICS FOR IS&amp;T</td>
<td>3</td>
</tr>
<tr>
<td>or equivalent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISQA 8040</td>
<td>AN OVERVIEW OF SYSTEMS DEVELOPMENT</td>
<td>3</td>
</tr>
<tr>
<td>or equivalent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISQA 3310</td>
<td>MANAGING THE DATABASE ENVIRONMENT</td>
<td>3</td>
</tr>
</tbody>
</table>

Requirements
No more than two courses (6 credit hours maximum) can be used on two MIS-related certificates (Data Analytics, Information Assurance, Project Management, and Systems Analysis and Design).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISQA 8016</td>
<td>BUSINESS INTELLIGENCE</td>
<td>3</td>
</tr>
<tr>
<td>ISQA 8206</td>
<td>INFORMATION AND DATA QUALITY MANAGEMENT</td>
<td></td>
</tr>
<tr>
<td>ISQA 8450</td>
<td>NOSQL AND BIG DATA TECHNOLOGIES</td>
<td></td>
</tr>
<tr>
<td>ISQA 8460</td>
<td>INTERNET OF THINGS (IOT), BIG DATA AND THE CLOUD</td>
<td></td>
</tr>
<tr>
<td>ISQA 8600</td>
<td>FROM DATA TO DECISIONS</td>
<td></td>
</tr>
<tr>
<td>ISQA 8700</td>
<td>DATA MINING: THEORY AND PRACTICE</td>
<td></td>
</tr>
<tr>
<td>CSCI 8350</td>
<td>DATA WAREHOUSING AND DATA MINING</td>
<td></td>
</tr>
</tbody>
</table>

Data Analytics

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISQA 8156</td>
<td>ADVANCED STATISTICAL METHODS FOR IS&amp;T</td>
<td>3</td>
</tr>
</tbody>
</table>
ISQA 8340  APPLIED REGRESSION ANALYSIS
ISQA 8700  DATA MINING: THEORY AND PRACTICE
ISQA 8720  APPLIED STATISTICAL MACHINE LEARNING
ISQA 8736  DECISION SUPPORT SYSTEMS
ISQA 8160  APPLIED DISTRIBUTION FREE STATISTICS
ISQA 9120  APPLIED EXPERIMENTAL DESIGN AND ANALYSIS
ISQA 9130  APPLIED MULTIVARIATE ANALYSIS
CSCI/MATH 8156  GRAPH THEORY & APPLICATIONS
ECON 8310  BUSINESS FORECASTING
CSCI/MATH 8306  DETERMINISTIC OPERATIONS RESEARCH MODELS

Data Visualization  3
ISQA 8525  GRAPHICAL USER INTERFACE DESIGN
ISQA 8750  STORYTELLING WITH DATA
GEOG 8535  CARTOGRAPHY AND DATA VISUALIZATION

Electives  6
Pick two of the remaining courses from any of the three categories above 1

Total Credits  15

1 ISQA 8080, ISQA 8086, and ISQA 8900 may be used but must be related to data analytics. Prior approval from the GPC is required to use these courses.

Completion of the Certificate
During what is expected to be the semester the certificate is completed and prior to the posted deadline, students should apply for the certificate through MavLINK on or before the deadline. If you complete the application form and do not complete all of the requirements for the certificate, contact the Office of Graduate Studies as soon as possible. You must reapply during the next semester in which you expect to complete the certificate; no additional fee is charged to reactivate your application.

The following requirements are due 12 working days prior to commencement:

• “Incomplete” and “NR” grades from previous terms must be removed so that the grade will be in the Office of Graduate Studies.
• All fees, fines, and other obligations due the university must be settled.

For students currently enrolled in courses that are a part of their plan of study, enrollment must be maintained in order to complete the certificate. A grade for any current enrollment must be received by the Registrar’s Office no later than the close of business on the fifteenth working day following the end of a semester.

Awarding of Graduate Certificates
The Office of Graduate Studies will mail the certificate to students when all requirements are completed and all obligations to the university are satisfied. The Graduate College will not approve any changes in the student’s permanent record once the certificate is awarded.