



# BUSINESS ANALYTICS CERTIFICATE

To give students exposure to computer programming, business intelligence, computer models, and data management in order to foster decision making in the modern enterprise.

For students enrolled in the following degree programs:

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**Program Directors:**

Troy Adair  
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 Department of Decision and  
 Technology Analytics  
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 for more information

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- Bachelor of Science in Business and Economics
- Bachelor of Science in Integrated Business & Engineering
- Bachelor of Science in Computer Science & Business

Upon program completion, students will:

- Understand the field of data science with an understanding of three distinct areas: predictive (forecasting), descriptive (business intelligence and data mining), and prescriptive (optimization and simulation)
- Apply data analytic tools in different business disciplines to formulate and solve business problems
- Demonstrate an understanding of fundamental computer programming constructs and concepts
- Understand how data is collected, prepared, stored, analyzed, modeled, and visualized for analytical business analysis and decision making



**LEHIGH**  
 UNIVERSITY

**College of  
 Business**

# Program Overview ( 12 credits)

## Required Course\* (3 credits)

- CSE 012: Survey of Computer Science
- Exceptions:
  - Students with credit for CSE 001, contact Emily Ford ([eaf311@lehigh.edu](mailto:eaf311@lehigh.edu)) for an override to take CSE 012
  - Students with credit for CSE 002 should take CSE 160 (Introduction to Data Science) for the required course, which does *not* double count towards the elective courses.
  - BIS majors are encouraged to take BIS 335 and, subsequently, CSE 160 instead of CSE 012 for the required course; CSE 160 will not double count for the electives



## Elective Courses\* (9 credits) – choose any three of the following from at least **two** different subject areas:

- ACCT 330: Accounting Data and Analytics
- BIS 324: Business Data Management
- BIS 335: Application Development for Business
- BIS 348: Predictive Analytics in Business
- BIS 352: Advanced Topics in Business Analytics
- CSE 160: Introduction to Data Science
- ECO/MKT 325: Consumer Insights through Data Analysis
- ECO 247: Sabermetrics
- ECO 357: Econometrics
- ECO 360: Time Series Analysis
- ECO 367: Applied Microeconometrics
- FIN 334: Derivatives and Management of Risk
- FIN 336: Real Estate Finance
- MKT 326: Marketing Analytics in a Digital Space



*\*Must earn a grade of C- or higher.*

