

## New Program Proposal

Date Submitted: 12/21/23 8:35 am

### Viewing: **DTSCBS-FIDA : Data Science: Financial Data Analytics Concentration**

Last edit: 01/30/24 9:08 am

Changes proposed by: schubert

Submitter: User ID: Schubert Phone:  
575-2264

Program Status Active

Academic Level Undergraduate

Type of proposal Concentration

Select a reason for this new program Adding New Concentration

Effective Catalog Year Fall 2024

College/School Code  
College of Engineering (ENGR)

Department Code  
Data Science (DASC)

Program Code DTSCBS-FIDA

Degree Bachelor of Science

CIP Code

#### In Workflow

1. ENGR Dean Initial
2. Director of Curriculum Review and Program Assessment
3. Registrar Initial
4. Institutional Research
5. DASC Chair
6. ENGR Curriculum Committee
7. ENGR Faculty
8. WCOB Dean
9. ENGR Dean
10. ARSC Dean
11. Global Campus
12. Provost Review
13. Undergraduate Council
14. Faculty Senate
15. Provost Final
16. Registrar Final
17. Catalog Editor Final

#### Approval Path

1. 01/08/24 10:50 am  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean Initial
2. 01/09/24 1:10 pm  
Lisa Kulczak  
(lkulcza): Approved  
for Director of  
Curriculum Review  
and Program  
Assessment

3. 01/09/24 6:48 pm  
Gina Daugherty  
(gdaugher):  
Approved for  
Registrar Initial
4. 01/10/24 9:48 am  
Doug Miles  
(dmiles): Approved  
for Institutional  
Research
5. 01/10/24 9:50 am  
Karl Schubert  
(schubert):  
Approved for DASC  
Chair
6. 01/22/24 12:33 pm  
Manuel Rossetti  
(rossetti): Approved  
for ENGR  
Curriculum  
Committee
7. 01/24/24 9:16 am  
Kevin Hall (kdhall):  
Approved for ENGR  
Faculty
8. 01/24/24 10:01 am  
Alan Ellstrand  
(aellstra): Approved  
for WCOB Dean
9. 01/26/24 10:29 am  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean
10. 01/26/24 10:38 am  
Christopher Liner  
(liner): Approved for  
ARSC Dean
11. 01/26/24 11:14 am  
Suzanne Kenner  
(skenner): Approved  
for Global Campus

- 12. 01/29/24 5:27 pm  
Matthew Ganio  
(msganio): Rollback to WCOB Dean for Provost Review
- 13. 01/29/24 8:25 pm  
Alan Ellstrand  
(aellstra): Approved for WCOB Dean
- 14. 01/30/24 9:08 am  
Kevin Hall (kdhall): Approved for ENGR Dean
- 15. 01/30/24 9:14 am  
Christopher Liner  
(liner): Approved for ARSC Dean
- 16. 01/30/24 10:45 am  
Suzanne Kenner  
(skenner): Approved for Global Campus
- 17. 01/30/24 12:01 pm  
Matthew Ganio  
(msganio): Approved for Provost Review
- 18. 02/28/24 1:46 pm  
Lisa Kulczak  
(lkulcza): Approved for Undergraduate Council

30.3001 - Computational Science.

Program Title

Data Science: Financial Data Analytics Concentration

Program Delivery

Method

On Campus

Is this program interdisciplinary?

Yes

College(s)/School(s)

College/School Name
College of Engineering (ENGR)
Fulbright College of Arts and Sciences (ARSC)
Walton College of Business (WCOB)

Does this proposal impact any courses from another College/School?

Yes

College(s)/School(s)

College/School Name
Walton College of Business (WCOB)

What are the total  
hours needed to  
complete the  
program?

120

## Program Requirements and Description

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Requirements

### Required Financial Data Analytics Concentration Courses

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<a href="#"><u>ACCT 20103</u></a>	Accounting Principles	3
<a href="#"><u>FINN 20403</u></a>	Principles of Finance <sup>5</sup>	3
<a href="#"><u>FINN 31003</u></a>	Financial Modeling <sup>6</sup>	3
<a href="#"><u>FINN 43203</u></a>	Financial Data Analytics I <sup>13</sup>	3
Elective Financial Data Analytics Courses (Select 9 hours)		9
<a href="#"><u>FINN 30003</u></a>	Personal Financial Management	
<a href="#"><u>FINN 30103</u></a>	Financial Analysis <sup>6</sup>	
<a href="#"><u>FINN 30503</u></a>	Financial Markets and Institutions <sup>11</sup>	
<a href="#"><u>FINN 30603</u></a>	Investments <sup>6,12</sup>	
<a href="#"><u>FINN 31303</u></a>	Commercial Banking <sup>6</sup>	
<a href="#"><u>FINN 36003</u></a>	Corporate Finance <sup>6,7</sup>	
<a href="#"><u>FINN 36203</u></a>	Risk Management	
<a href="#"><u>FINN 37003</u></a>	International Finance	

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<a href="#"><u>FINN 39303</u></a>	Real Estate Principles
<a href="#"><u>FINN 41603</u></a>	Advanced Financial Modeling <sup>8</sup>
<a href="#"><u>FINN 42403</u></a>	New Venture Finance <sup>9</sup>
<a href="#"><u>FINN 43303</u></a>	Financial Data Analytics II <sup>10</sup>
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Total Hours	21



## 8-Semester Plan

## Data Science B.S. with Financial Data Analytics Concentration

### Eight-Semester Program

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First Year	Units
	FallSpring
<a href="#"><u>MATH 24004</u></a> Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1) <sup>1</sup>	4
<a href="#"><u>ENGL 10103</u></a> Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3
<a href="#"><u>DASC 10003</u></a> Introduction to Data Science	3
<a href="#"><u>DASC 11004</u></a> Programming Languages for Data Science	4
General Elective	3
<a href="#"><u>MATH 25004</u></a> Calculus II	4
<a href="#"><u>ECON 21403</u></a> Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)	3
<a href="#"><u>ENGL 10303</u></a> Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)	3
<a href="#"><u>DASC 12004</u></a> Introduction to Object Oriented Programming for Data Science	4
<a href="#"><u>DASC 12203</u></a> Role of Data Science in Today's World	3
Year Total:	17 17
Second Year	Units
	FallSpring
<a href="#"><u>DASC 25904</u></a> Multivariable Math for Data Scientists	4
<a href="#"><u>STAT 30133</u></a> Introduction to Probability <sup>4</sup>	3
or <a href="#"><u>INEG 23203</u></a> Probability and Stochastic Processes for Industrial Engineers	
<a href="#"><u>DASC 22103</u></a> Data Visualization and Communication	3
<a href="#"><u>DASC 21103</u></a> Principles and Techniques of Data Science	3
State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2) <sup>2</sup>	3
<a href="#"><u>SEVI 20503</u></a> Business Foundations (DASC-only section required)	3
<a href="#"><u>STAT 30043</u></a> Statistical Methods <sup>4</sup>	3-4
or <a href="#"><u>INEG 23104</u></a> Statistics for Industrial Engineers I	
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) <sup>2</sup>	4
<a href="#"><u>DASC 22003</u></a> Data Management and Data Base	3
<a href="#"><u>ECON 30303</u></a> Microeconomic Theory	3
Year Total:	16 16
Third Year	Units
	FallSpring
<a href="#"><u>DASC 21303</u></a> Data Privacy & Ethics (Satisfies General Education Outcome 5.1)	3
<a href="#"><u>DASC 31003</u></a> Cloud Computing and Big Data	3
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3) <sup>2</sup>	3
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4) <sup>2</sup>	4
<a href="#"><u>ECON 31303</u></a> Macroeconomic Theory	3

<a href="#">DASC 32003</a> Optimization Methods in Data Science	3
<a href="#">DASC 32103</a> Statistical Learning	3
<a href="#">ECON 47403</a> Introduction to Econometrics	3
State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1) <sup>2</sup>	3
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1) <sup>2</sup>	3
Year Total:	16 15
Fourth Year	Units
	FallSpring
<a href="#">DASC 48902</a> Data Science Practicum I	2
<a href="#">DASC 41103</a> Machine Learning	3
<a href="#">DASC 41203</a> Social Problems in Data Science and Analytics	3
<a href="#">ECON 47503</a> Forecasting	3
<a href="#">ECON 47603</a> Economic Analytics	3
<a href="#">DASC 49903</a> Data Science Practicum II (Satisfies General Education Outcome 6.1)	3
Economic Analytics Concentration Elective	3
Economic Analytics Concentration Elective	3
Year Total:	14 9
Total Units in Sequence:	120
1	
Students have demonstrated successful completion of the learning indicators identified for learning outcome 2.1, by meeting the prerequisites for <a href="#">MATH 24004</a> .	
2	
Students must complete the <a href="#">State Minimum Core requirements</a> as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's <a href="#">General Education requirements</a> , although there are additional considerations to satisfy the general education learning outcomes. Students are encouraged to consult with their academic adviser when making course selections.	
3	
Students are required to complete 40 hours of upper-division courses (3000-4000 level). It is recommended that students consult with their adviser when making course selections.	
4	
Data Science Statistics and Computational Analytics Concentration students are advised to select <a href="#">STAT 30133/STAT 30043</a> to meet the prerequisites required in the concentration.	
5	
Prerequisites: <a href="#">BUSI 10303</a> or <a href="#">STAT 30043</a> or <a href="#">INEG 23104</a> or equivalent and <a href="#">ACCT 20103</a> and <a href="#">ECON 21403</a> .	
6	
Prerequisite: <a href="#">FINN 20403</a> .	
7	
Prerequisites: <a href="#">FINN 30103</a> .	
8	
Prerequisites: <a href="#">FINN 30103</a> or <a href="#">FINN 31003</a> .	
9	
Prerequisite: Junior standing.	
10	
Prerequisite: <a href="#">FINN 43203</a> .	
11	
Prerequisite: <a href="#">ECON 21403</a> .	



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Corequisite: [FINN 30103](#).

13

Prerequisite: [FINN 41603](#) or [DASC 21103](#).

Program Costs

No additional resources needed

Library Resources

No additional resources needed

Instructional

Facilities

No additional resources needed

Faculty Resources

No additional resources needed

List Existing Certificate or Degree Programs that Support the Proposed Program

Program(s)
DTSCBS - Data Science, Bachelor of Science

Are Similar Programs available in the area?

No

Estimated Student Demand for Program See DTSCBS PLAN

Scheduled Program 2025-2026

Review Date

Program Goals and Objectives

Program Goals and Objectives

See DTSCBS PLAN

Learning Outcomes

Learning Outcomes

See DTSCBS PLAN

Description and Justification for this request

Description of request	Justification for request
This is the addition of a Financial Data Analytics (FIDA) Concentration to the B.S. Data Science degree.	A data science degree with a concentration in Financial Analytics will provide students with a strong background in core financial concepts and the latest applied tools in financial modeling and financial analytics. The concentration is structured so that students will have the flexibility to focus heavily on financial analytics or to focus on a combination of analytics and traditional finance content such as Investments and Corporate Finance. These skills will enable graduates to apply cutting-edge technical tools to financial projects and to bridge the communication gap between corporate technicians and financial analysts.

## Upload attachments

[00 Data Science FIDA Concentration Nov 13 2023 v3.pdf](#)

[02 UoA BS FIDA Suggested Plan of Study \(8-semester\) v24-8a.pdf](#)

[01 DASC Financial Data Analytics Concentration \(FIDA\).pdf](#)

## Reviewer Comments

**Lisa Kulczak (lkulcza) (01/09/24 1:09 pm):** Changed CIP code to match that of DTSCBS, as concentrations must carry the same CIP code as the overall major. Updated next scheduled program date.

**Matthew Ganio (msganio) (01/29/24 5:27 pm):** Rollback: These fields reference the core major (DTSCBS) but the fields are not on the original major. Please fill them in specific to this concentration. Program Costs See DTSCBS PLAN Library Resources See DTSCBS PLAN Instructional Facilities See DTSCBS PLAN Faculty Resources See DTSCBS PLAN

Key: 984