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: 575-2264	User ID:	Schubert	Phone:
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

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

Requirements

Required Financial Data Analytics Concentration Courses

ACCT 20103	Accounting Principles	3
FINN 20403	Principles of Finance [5]	3
FINN 31003	Financial Modeling [6]	3
FINN 43203	Financial Data Analytics I [13]	3
Elective Financial Data Analytics Courses (Select 9 hours)		9
FINN 30003	Personal Financial Management	
FINN 30103	Financial Analysis [6]	
FINN 30503	Financial Markets and Institutions [11]	
FINN 30603	Investments [6,12]	
FINN 31303	Commercial Banking [6]	
FINN 36003	Corporate Finance [6,7]	
FINN 36203	Risk Management	
FINN 37003	International Finance	
FINN 39303	Real Estate Principles	
FINN 41603	Advanced Financial Modeling [8]	
FINN 42403	New Venture Finance [9]	
FINN 43303	Financial Data Analytics II [10]	

Total Hours	21

8-Semester Plan

Data Science B.S. with Financial Data Analytics Concentration

Eight-Semester Program

First Year	Units	
	Fall	Spring
MATH 24004 Calculus I (ACTS Equivalency = MATH 2405) (Satisifies General Education Outcome 2.1)[1]	4	
ENGL 10103 Composition I (ACTS Equivalency = ENGL 1013) (Satisifies General Education Outcome 1.1)	3	
DASC 10003 Introduction to Data Science	3	
DASC 11004 Programming Languages for Data Science	4	
General Elective	3	
MATH 25004 Calculus II		4
ECON 21403 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)		3
ENGL 10303 Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisifies General Education Outcome 1.2)		3
DASC 12004 Introduction to Object Oriented Programming for Data Science		4
DASC 12203 Role of Data Science in Today's World		3
Year Total:	17	17

Second Year	Units	
	Fall	Spring
DASC 25904 Multivariable Math for Data Scientists	4	
STAT 30133 Introduction to Probability[4]	3	
or INEG 23203 Probability and Stochastic Processes for Industrial Engineers		
DASC 22103 Data Visualization and Communication	3	
DASC 21103 Principles and Techniques of Data Science	3	
State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2)[2]	3	
SEVI 20503 Business Foundations (DASC-only section required)		3
STAT 30043 Statistical Methods[4]		3-4
or INEG 23104 Statistics for Industrial Engineers I		
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4)[2]		4
DASC 22003 Data Management and Data Base		3
ECON 30303 Microeconomic Theory		3
Year Total:	16	16

Third Year	Units	
	Fall	Spring
DASC 21303 Data Privacy & Ethics (Satisfies General Education Outcome 5.1)	3	
DASC 31003 Cloud Computing and Big Data	3	
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3)[2]	3	
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4)[2]	4	
ECON 31303 Macroeconomic Theory	3	

DASC 32003 Optimization Methods in Data Science		3
DASC 32103 Statistical Learning		3
ECON 47403 Introduction to Econometrics		3
State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1)[2]		3
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1)[2]		3
Year Total:	16	15

Fourth Year	Units	
	Fall	Spring
DASC 48902 Data Science Practicum I	2	
DASC 41103 Machine Learning	3	
DASC 41203 Social Problems in Data Science and Analytics	3	
ECON 47503 Forecasting	3	
ECON 47603 Economic Analytics	3	
DASC 49903 Data Science Practicum II (Satisifies 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 MATH 24004.

2 Students must complete the State Minimum Core requirements as outlined in the Catalog of Studies. The courses that meet the state minimum core also fulfill many of the university's General Education requirements, 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 STAT 30133/STAT 30043 to meet the prerequisites required in the concentration.

5 Prerequisites: BUSI 10303 or STAT 30043 or INEG 23104 or equivalent and ACCT 20103 and ECON 21403.

6 Prerequisite: FINN 20403.

7 Prerequisites: FINN 30103.

8 Prerequisites: FINN 30103 or FINN 31003.

9 Prerequisite: Junior standing.

10 Prerequisite: FINN 43203.

11 Prerequisite: ECON 21403.

12
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 Review Date: 2025-2026

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