

# Program Change Request

Date Submitted: 12/22/21 2:04 pm

Viewing: **DTSCBS-DSST : Data Science: Data**

## Science Statistics Concentration

Last approved: 05/18/21 6:52 pm

Last edit: 01/06/22 1:18 pm

Changes proposed by: schubert

Catalog Pages Using

this Program

[Data Science B.S. with Data Science Statistics Concentration](#)

[Data Science \(DTSC\)](#)

Submitter: User ID: schubert Phone: 5-2264

Program Status Active

Academic Level Undergraduate

Type of proposal Concentration

Select a reason for this modification

Making Minor Changes to an Existing Certificate or Degree (e.g. changing 15 or fewer hours, changing admission/graduation requirements, adding/changing Focused Study or Track)

Effective Catalog Year Fall 2022

College/School Code  
College of Engineering (ENGR)

Department Code  
Department of Engineering Dean (ENGD)

Program Code DTSCBS-DSST

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. ENGD Chair
6. ENGR Curriculum Committee
7. ENGR Faculty
8. ARSC Dean
9. WCOB Dean
10. ENGR Dean
11. Global Campus
12. Provost Review
13. University Course and Program Committee
14. Faculty Senate
15. Provost Final
16. Registrar Final
17. Catalog Editor Final

### Approval Path

1. 12/23/21 2:24 pm  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean Initial
2. 01/05/22 1:09 pm  
Alice Griffin  
(agriffin): Approved  
for Director of

- Curriculum Review  
and Program  
Assessment
3. 01/06/22 1:24 pm  
Gina Daugherty  
(gdaugher):  
Approved for  
Registrar Initial
  4. 01/06/22 3:51 pm  
Doug Miles  
(dmiles): Approved  
for Institutional  
Research
  5. 01/20/22 1:11 pm  
Kevin Hall (kdhall):  
Approved for ENGD  
Chair
  6. 01/20/22 1:16 pm  
Manuel Rossetti  
(rossetti): Approved  
for ENGR  
Curriculum  
Committee
  7. 01/20/22 3:21 pm  
Kevin Hall (kdhall):  
Approved for ENGR  
Faculty
  8. 01/20/22 4:10 pm  
Jeannie Hulen  
(jhulen): Approved  
for ARSC Dean
  9. 01/25/22 11:17 am  
Karen Boston  
(kboston):  
Approved for WCOB  
Dean
  10. 01/25/22 12:50 pm  
Kevin Hall (kdhall):  
Approved for ENGR  
Dean

- 11. 01/25/22 12:52 pm  
Suzanne Kenner  
(skenner): Approved  
for Global Campus
- 12. 02/02/22 8:44 am  
Ketevan  
Mamiseishvili  
(kmamisei):  
Approved for  
Provost Review
- 13. 02/28/22 4:52 pm  
Alice Griffin  
(agriffin): Approved  
for University  
Course and Program  
Committee

### History

- 1. May 7, 2020 by Lisa  
Kulczak (lkulcza)
- 2. May 8, 2020 by  
Charlie Alison  
(calison)
- 3. May 18, 2021 by  
Karl Schubert  
(schubert)

30.3001 - Computational Science.

Program Title

Data Science: Data Science Statistics Concentration

Program Delivery

Method

On Campus

Is this program interdisciplinary?

Yes

College(s)/School(s)

<b>College/School Name</b>
Fulbright College of Arts and Sciences (ARSC)

**College/School Name**

Walton College of Business (WCOB)

College of Engineering (ENGR)

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

No

What are the total hours needed to complete the program?

21

## Program Requirements and Description

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### Requirements

### Required Data Science Statistics Concentration Courses

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<a href="#">STAT 3113</a>	Introduction to Mathematical Statistics	3
<a href="#">STAT 4373</a>	Experimental Design	3
<a href="#">STAT 4013</a>	Statistical Forecasting and Prediction (Statistical Forecasting and Prediction)	3
<a href="#">STAT 4333</a>	Analysis of Categorical Responses	3
Elective Data Science Statistics Concentration (Select 9 hours)		9
<a href="#">STAT 4023</a>	Bayesian Methods (Bayesian Methods)	
<a href="#">STAT 5043</a>	Sampling Techniques	
<a href="#">STAT 4033</a>	Nonparametric Statistical Methods	
<a href="#">CSCE 4613</a>	Artificial Intelligence	
<a href="#">GEOS 3013</a>	Foundations of Geospatial Data Analysis	
<a href="#">GEOS 3543</a>	Geospatial Applications and Information Science	
<a href="#">GEOS 3563</a>	Geospatial Data Mining	
Total Hours		21

### 8-Semester Plan

## Data Science B.S. with Data Science Statistics Concentration

### Eight-Semester Program

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First Year	Units
	FallSpring
<a href="#">MATH 2554</a> Calculus I (ACTS Equivalency = MATH 2405) (Satisfies General Education Outcome 2.1)1	4

State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4)	4
<u>ENGL 1013</u> Composition I (ACTS Equivalency = ENGL 1013) (Satisfies General Education Outcome 1.1)	3
<u>DASC 1104</u> Programming Languages for Data Science	4
<u>DASC 1001</u> Introduction to Data Science	1
<del>State Minimum Core U.S. History or Government (Satisfies General Education Outcome 4.2)</del>	- 3
<u>MATH 2564</u> Calculus II (ACTS Equivalency = MATH 2505)	4
<b><u>ECON 2143</u> Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)</b>	<b>3</b>
<u>ENGL 1033</u> Technical Composition II (ACTS Equivalency = ENGL 1023) (Satisfies General Education Outcome 1.2)	3
<u>DASC 1204</u> Introduction to Object Oriented Programming for Data Science	4
<u>DASC 1222</u> Role of Data Science in Today's World	2
Year Total:	16 16
Second Year	Units
	FallSpring
<u>DASC 2594</u> Multivariable Math for Data Scientists	4
<u>STAT 3013</u> Introduction to Probability4	3
or <u>INEG 2313</u> Course INEG 2313 Not Found	
<del><u>INEG 2313</u> Course INEG 2313 Not Found</del>	
<del>State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1)3</del>	<del>3 -</del>
<u>DASC 2213</u> Data Visualization and Communication	3
<u>DASC 2113</u> Principles and Techniques of Data Science	3
State Minimum Core Fine Arts Elective (Satisfies General Education Outcome 3.1)2	3
<u>SEVI 2053</u> Business Foundations (Data Science Majors-only section)	3
<u>STAT 3003</u> Statistical Methods (Statistical Methods)4	3
or <u>INEG 2333</u> Applied Probability and Statistics for Engineers II	
<del><u>INEG 2333</u> Applied Probability and Statistics for Engineers II</del>	
<u>DASC 2103</u> Data Structures & Algorithms	3
<del>Choose one of the following2</del>	<del>- 3</del>
<u>DASC 2203</u> Data Management and Data Base	3
<u>STAT 3113</u> Introduction to Mathematical Statistics	3
Year Total:	16 15
Third Year	Units
	FallSpring
<u>PHIL 3103</u> Ethics and the Professions (Satisfies General Education Outcome 5.1)	3
<u>DASC 3103</u> Cloud Computing and Big Data	3
<u>STAT 4373</u> Experimental Design	3
State Minimum Core Natural Science Elective with Lab (Satisfies General Education Outcome 3.4)	4
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.2 and 3.3)2	3

<a href="#">DASC 3203</a> Optimization Methods in Data Science	3
<a href="#">DASC 3213</a> Statistical Learning	3
<a href="#">STAT 4333</a> Analysis of Categorical Responses	3
<del>ECON 2143 Basic Economics: Theory and Practice (Satisfies General Education Outcome 3.3)</del>	<del>- 3</del>
<b>State Minimum Core U.S. History or Government Elective (Satisfies General Education Outcome 4.2)2</b>	<b>3</b>
State Minimum Core Social Sciences Elective (Satisfies General Education Outcomes 3.3 and 4.1)2	3
Year Total:	16 15

## Fourth Year

Units  
FallSpring

<a href="#">DASC 4892</a> Data Science Practicum I	2
<a href="#">DASC 4113</a> Machine Learning	3
<a href="#">DASC 4123</a> Social Problems in Data Science and Analytics	3
<a href="#">STAT 4013</a> Statistical Forecasting and Prediction (Statistical Forecasting and Prediction)	3
Data Science Statistics Concentration Elective	3
<a href="#">DASC 4993</a> Data Science Practicum II (Satisfies General Education Outcome 6.1)	3
Data Science Statistics Concentration Elective	3
Data Science Statistics Concentration Elective	3
<del>Concentration Elective</del>	<del>- 3</del>
<b>General Elective3</b>	<b>3</b>
Year Total:	14 12

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 2554](#).
- 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 3013/STAT 3003](#) to meet the prerequisites required in the concentration.
- 5 ~~The Social Sciences Elective courses which satisfy General Education Outcomes 3.3 and 4.1 include: ANTH 1023, COMM 1023, HDFS 1403, HDFS 2413, HIST 1113, HIST 1113H, HIST 1123, HIST 1123H, HIST 2093, HUMN 1114H, HUMN 2114H, INST 2013, INST 2813, INST 2813H, PLSC 2013, PLSC 2813, PLSC 2813H, RESM 2853, SOCI 2013, SOCI 2013H, or SOCI 2033.~~

Are Similar Programs available in the area?

No

Estimated Student Demand for Program      See DASCBS PLAN

Scheduled Program Review Date      See DASCBS PLAN

Program Goals and Objectives

**Program Goals and Objectives**

See DASCBS PLAN

Learning Outcomes

**Learning Outcomes**

See DASCBS PLAN

Description and justification of the request

<b>Description of specific change</b>	<b>Justification for this change</b>
Corrections were made to match the original Program-wide 8-semester plan.	Ensuring the Data Science Program cohorts are cohesive and managing student advising in the original Program-wide 8-semester plan.

Upload attachments

Reviewer Comments

**Alice Griffin (agriffin) (01/05/22 11:49 am):** Entered Data Science into header of eight semester plan for consistency with Program Title of concentration. College is encouraged to review for accuracy.

**Alice Griffin (agriffin) (01/05/22 11:56 am):** Replaced footnote 2, which duplicated footnote 1, with the general education notation. College is encouraged to review for accuracy.

**Gina Daugherty (gdaughter) (01/06/22 1:18 pm):** Adjusted inline course references.