



Institutional Approvals and Dates of Approval

<b>Computer Science Department Chair:</b>	<b>December 5, 2016</b>
<b>School of Sciences and Mathematics Dean:</b>	<b>December 5, 2016</b>
<b>Provost:</b>	<b>February 16, 2016</b>
<b>Faculty Curriculum Committee:</b>	<b>February 26, 2016</b>
<b>Faculty Senate:</b>	<b>March 15, 2016</b>

**Background Information**

Provide a detailed description of the proposed modification, including its nature and purpose and centrality to institutional mission. (1500 characters)

**At present there are 14 cognates in the Data Science Degree (B.S.) that contain courses offered by the School of Business, the School of Science and Mathematics, and the School of Humanities and Social Sciences. These cognates have a number of drawbacks and problems that this proposal is designed to address. First, they range in required credit hours from 15 to 30. This range is too broad. Second, many of the cognates are inflexible and do not include any room for electives or customization. Finally, there is currently no option in the Data Science degree for students to take any Computer Science or Mathematics electives.**

**We propose a single simplified model for cognates (now referred to as emphases). Emphases are chosen instead of cognates so that a student does not have to choose their emphasis as incoming freshmen, allowing them more flexibility and time to decide on an emphasis. There will no longer be 14 prescribed cognates. Specifically, we propose that an emphasis will be 9 credit hours at the 300 or higher level in either the Sciences, Social Sciences, Arts and Humanities, or Business Analytics. In the Business Analytics emphasis, 3 of the 9 credit hours are used specifically for INFM 350: Business Analytics since we want to ensure students take this course. It is also unique in that DSCI 232 is also required as it is a prerequisite for INFM 350, so this course is also specifically listed as part of the cognate.**

**A second and related change is we are adding 6 credit hours of electives that may be filled by the MATH and CSCI courses specified in this proposal. This brings the emphases + MATH/CSCI elective total to 15 credit hours, which is within the range of the original cognates.**

**This proposal standardizes the credit hour requirements for the students and increases the available options to specialize in a domain of interest. Based on consultations with our constituents (graduate programs like the Masters of Analytics at the University of San Francisco and companies like PokItDok and Wells Fargo) we believe it is critical for a data scientist to gain an understanding of a specific domain, and we are excited to expand the possible domains to include new options, such as an emphasis in Arts and Humanities.**

List the objectives of the modified program. (1500 characters)

**The program objectives do not change:**

- 1. Graduates will demonstrate competency in computer science, including programming, data organization, data mining, data structures, & algorithms.**
- 2. Graduates will demonstrate competency in core area of mathematics and statistics, including pre-calculus, calculus, and statistical inference.**
- 3. Graduates will demonstrate the ability to synthesize the knowledge students acquired in math, stats, and computer science applied through a senior level capstone experience.**

### **Assessment of Need**

Provide an assessment of the need for the program modification for the institution, the state, the region, and beyond, if applicable. (1500 characters)

**The Bachelor of Science in Data Science is intended for students who wish to pursue professional positions in data mining, business intelligence, national security, genomics, drug informatics, and any other data-intensive field in which new knowledge is discovered through patterns in data.**

**This program is already well established at the College of Charleston and will continue to have the same beneficial impact on the institution, state, and region. The point of this program change is to simplify, better standardized, and make more flexible the "cognate" choices (now called emphases) that students take. There is no change to the mission of the program or the program objectives.**

Will the proposed modification impact any existing programs and services at the institution?

Yes

No

If yes, explain. (1000 characters)

**Since the cognate courses are typically all taught by other departments across campus, written endorsements for this modification were secured from all the participating departments.**

**List of Similar Programs in South Carolina**

<b>Program Name</b>	<b>Institution</b>	<b>Similarities</b>	<b>Differences</b>
N/A			

**Description of the Program**

<b>Projected New Enrollment</b>						
<b>Year</b>	<b>Fall</b>		<b>Spring</b>		<b>Summer</b>	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
2016-2017	40	600	40		0	600
2017-2018	45	675	45		0	675
2018-2019	50	750	50		0	750
2019-2020	55	825	55		0	825
2020-2021	60	900	60		0	900

**Curriculum**

Attach a curriculum sheet identifying the courses required for the program.

**Curriculum Changes**

**Note: Complete this table only if there are changes to the curriculum.**

<b><u>NOTE:</u> There are too many individual courses to list since the emphases/cognates include listings of all upper level courses in some domains. So, below the cognate/emphases are provided instead.</b>	
<b>Courses Eliminated from Program</b>	<b>Courses Added to Program</b>
<b>Cognate in Accounting</b> <b>Cognate in Biomechanics</b> <b>Cognate in Customer Relationship Management</b> <b>Cognate in e-commerce</b> <b>Cognate in Economics</b> <b>Cognate in Exercise Physiology</b> <b>Cognate in Finance</b> <b>Cognate in Geoinformatics</b> <b>Cognate in Molecular Biology</b> <b>Cognate in Organismal Biology</b> <b>Cognate in Physics and Astronomy</b> <b>Cognate in Psychology Sociology</b> <b>Cognate in Supply Chain Management</b>	<b>Emphasis in Sciences</b> <b>Emphasis in Business Analytics</b> <b>Emphasis in Social Sciences</b> <b>Emphasis in Arts and Humanities</b>

### **Faculty**

Provide a brief explanation of any additional institutional changes in faculty and/or administrative assignment that may result from implementing the proposed program modification. (1000 characters)

**None.**

### **Resources**

Identify any new library/learning resources, new instructional equipment, and new facilities or modifications to existing facilities needed to support the modified program. (2000 characters)

**None.**

### Financial Support

Estimated New Costs by Year						
Category	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	Total
Program Administration	<b>None</b>					
Faculty and Staff Salaries	<b>None</b>					
Graduate Assistants	<b>None</b>					
Equipment	<b>None</b>					
Facilities	<b>None</b>					
Supplies and Materials	<b>None</b>					
Library Resources	<b>None</b>					
Other*	<b>None</b>					
<b>Total</b>	<b>None</b>					
Sources of Financing						
Category	1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>	Total
Tuition Funding	<b>None</b>					
Program-Specific Fees	<b>None</b>					
State Funding (i.e., Special State Appropriation)*	<b>None</b>					
Reallocation of Existing Funds*	<b>None</b>					
Federal Funding*	<b>None</b>					
Other Funding*	<b>None</b>					
<b>Total</b>	<b>None</b>					
<b>Net Total</b> (i.e., Sources of Financing Minus Estimated New Costs)	<b>None</b>					

\*Provide an explanation for these costs and sources of financing in the budget justification.

### **Budget Justification**

Provide a brief explanation for the other new costs and any special sources of financing (state funding, reallocation of existing funds, federal funding, or other funding) identified in the Financial Support table. (1000 characters)

**Note: Institutions need to complete this budget justification *only* if any other new costs, state funding, reallocation of existing funds, federal funding, or other funding are included in the Financial Support table.**

There are no new costs associated with re-organizing existing courses from 14 cognate areas into four emphases. All of the courses are existing catalog courses and all of the courses are currently being taught, thus there are no new instructional costs.

### **Evaluation and Assessment**

Will any the proposed modification impact the way the program is evaluated and assessed?

Yes

No

If yes, explain. (1000 characters)

**N/A**

Will the proposed modification affect or result in program-specific accreditation?

Yes

No

If yes, explain; if the modification will result in the program seeking program-specific accreditation, provide the institution's plans to seek accreditation, including the expected timeline for accreditation. (500 characters)

**N/A**

Will the proposed modification affect or lead to licensure or certification?

Yes

No

If yes, explain how the program will prepare students for licensure or certification. (500 characters)

**N/A**

### **Teacher or School Professional Preparation Programs**

Is the proposed modified program a teacher or school professional preparation program?

Yes

No

If yes, complete the following components.

Area of Certification

**N/A**

Attach a document addressing the South Carolina Department of Education Requirements and SPA or Other National Specialized and/or Professional Association Standards.