

**Utah System of Higher Education
Changes to Existing Academic Program Proposal
Cover/Signature Page - Abbreviated Template**

Institution Submitting Request:

University of Utah

Program Title:

Current
Certificate in Big Data

Proposed (if applicable)
Certificate in Data Science

Sponsoring School, College, or Division:

College of Engineering

Sponsoring Academic Department(s) or Unit(s):

School of Computing

Classification of Instruction Program Code¹:

11.0701

Min/Max Credit Hours for Full Program Required:

15 / 15 /

Proposed Effective Term for Program Change²:

Fall 2020

Institutional Board of Trustees' Approval Date:

Program Change Type (check all that apply):

<input checked="checked" type="checkbox"/>	Name Change of Existing Program
<input type="checkbox"/>	Program Consolidation
<input type="checkbox"/>	Program Restructure
<input type="checkbox"/>	Program Transfer to a new academic department or unit
<input type="checkbox"/>	Program Suspension
<input type="checkbox"/>	Program Discontinuation
<input type="checkbox"/>	Reinstatement of Previously Suspended Program
<input type="checkbox"/>	Out-of-Service Area Delivery Program

Chief Academic Officer (or Designee) Signature:

I, the Chief Academic Officer or Designee, certify that all required institutional approvals have been obtained prior to submitting this request to the Office of the Commissioner.

Please type your first and last name _____

Date: _____

☐ I understand that checking this box constitutes my legal signature.

¹ For CIP code classifications, please see <http://nces.ed.gov/ipeds/cipcode/Default.aspx?y=55>.

² "Proposed Effective Term" refers to term when change to program is published. For Suspensions and Discontinuations, "effective term" refers to the term the program will suspend admissions.

Program Change Description - Abbreviated Template

Section I: The Request

University of Utah requests approval to change name from Certificate in Big Data to Certificate in Data Science effective Fall 2020. This action was approved by the institutional Board of Trustees on .

Section II: Program Proposal

Program Change Description/Rationale

Present a brief program change description. Describe the institutional procedures used to arrive at a decision for the change. Briefly indicate why such a change should be initiated. State how the institution and the USHE benefit by the change.

Gathering, managing, and analyzing large amounts of data has rapidly changed from a niche area a decade ago to substantial part of the local and global technology industry. In response to this, in 2014 the School of Computing launched a Graduate Certificate in Big Data. This involved a required set of 5 graduate level courses in these areas of computing, allowing one elective replacement. These courses are mostly online, this functionality made it well-suited to serve both graduate students in fields around campus which deal with large amounts of data (e.g., medicine, nursing, neurology, and applied mathematics) as well as engineers from local industry who want to update their skill set to gain expertise in these domains of growing importance.

It soon became clear that while there was interest in these domains, the areas intersecting with big data are broad, and the students attracted to these fields had very diverse interests. This led the certificate to allow more broad elective substitutions, and these tended to lean towards the more general issues in analyzing data -- not just dealing with its scale. That is, the certificate typically reshaped into a more general domain, what is now commonly referred to as "data science."

Since the certificate's launch, the School of Computing, has created several other degree options and paths. The MS in Computing has a degree path called a "track," and the most relevant one is called the "Data Management and Analysis Track." Starting in 2017 this offered an alternative set of class requirements called the "Data Science Option." The initial set of required courses closely aligns with those in the Graduate Certificate in Big Data. In 2019, a new degree, a Bachelors of Science in Data Science, was launched. The final set of required courses also closely aligned with those in the Graduate Certificate in Big Data. That is all three of these options center around a set of topics, represented by 4 courses: Machine Learning, Data Mining, Visualization for Data Science, and Database Systems. The material taught in these courses, is also consistent with data science graduate and undergraduate programs around the country.

In addition, the University of Utah has a Professional Masters in Science and Technology. This PMST program, in coordination with those organizing this proposal, is proposing to rebrand its "Computational Science" track to "Computational and Data Science." Under the updated requirements, the students focusing on the Data Science option within this track will be expected to apply for and complete this graduate certificate.

On November 8, 2019, the School of Computing met to discuss this name change. The proposal was unanimously approved with 41 votes in its favor.

In summary, in updating the trends in the broader interests of students who enter this certificate program, and the nomenclature of related programs at the University of Utah, the proposed name change would make the place of this certificate more clear and consistent. This would only change the name of the program, not program requirements or learning outcomes.

Consistency with Institutional Mission/Institutional Impact

Explain how the action is consistent with the institution's Regent-approved mission, roles, and goals. Institutional mission and roles may be found at highereducationutah.org/policies/policyr312/ . Indicate if the program will be delivered outside of designated service area; provide justification. Service areas are defined in highereducationutah.org/policies/policyr315/ . Will faculty or staff structures be impacted by the proposed change?

Since the Graduate Certificate in Big Data was created in 2014, around 10 students have completed the requirements as part of this program. This is out of 88 students who have been admitted. Of those admitted (the application process is free) 41 have taken at least one course. At least 2 have transferred to the MS in Computing program. The current steady state of the program has about 20 students who have just been admitted or took at least one course in the previous semester.

About 90% of the students in the program are working part of full time in local industry. So this certificate aids the university mission in engaging the local community, and amplifying the skilled employees available for local industry.

As this program is run with minimal administrative support, and in the extra time of a few faculty in the School of Computing, we believe it has been quite successful. Some of the students have reported getting new jobs in data science after taking only 1 or 2 courses, so even students who do not complete the degree have successful outcomes.

We do not anticipate any staffing changes needed. In fact, the name change will help staff and faculty more consistently organize this program within others being offered by the SoC and related entities at the University of Utah. Students currently active in the current "Big Data" program will be transferred to the new "Data Science"

certificate program. They will have the option to complete the certificate under the old name, but we will encourage them to use the new name, and anticipate all students will do so.

Suspension, Discontinuance, or Reinstatements ONLY

If suspending a program, indicate the statewide impact of this change. Explain the reason for suspension and the anticipated length of time for the suspension.

If discontinuing the program, indicate the statewide impact of this change. Explain how currently admitted students may complete the program within a reasonable period of time compatible with accreditation standards either through either (1) enrollment of students at other institutions of higher education; or (2) courses being taught for a maximum of two years after discontinuation of the program or until no admitted students remain who are entitled to complete the program, whichever comes first.

If reinstating a program, indicate the statewide impact of this change. Explain the reason for reestablishing the program and explain any changes being made to original program.

Finances

What costs or savings are anticipated from this change? If new funds are required to implement the change, indicate expected sources of funds. Describe any budgetary impact on other programs or units within the institution.

There are no anticipated changes to the program finance due to this name change.