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| S:\Communications\Logos and photos\SDBORLogos\final_sdbor_webreadyBW_trans.gif | **SOUTH DAKOTA BOARD OF REGENTS**ACADEMIC AFFAIRS FORMS |
| New Specialization |
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| --- | --- |
| **UNIVERSITY:** | **DSU** |
| **TITLE OF PROPOSED SPECIALIZATION:** | **Artificial Intelligence / Machine Learning** |
| **NAME OF DEGREE PROGRAM IN WHICH SPECIALIZATION IS OFFERED:** | **B.S. in Computer Science** |
| **INTENDED DATE OF IMPLEMENTATION:** | **5/4/2018** |
| **PROPOSED CIP CODE:** | **11.0101** |
| **UNIVERSITY DEPARTMENT:** | **Beacom College of Computer and Cyber Sciences** |
| **UNIVERSITY DIVISION:** | **Computer Science** |

**University Approval**

*To the Board of Regents and the Executive Director: I certify that I have read this proposal, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.*

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| --- | --- | --- |
| C:\Users\slaughts\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Dr. McKay Signature.jpg |  | 2/14/2018 |
| Institutional Approval Signature*President or Chief Academic Officer of the University* |  | Date |

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1. **Level of the Specialization (*place an “X” in the appropriate box*):**

|  |  |  |
| --- | --- | --- |
| Baccalaureate |[x]  Master’s |[x]  Doctoral |[ ]

1. **What is the nature/purpose of the proposed specialization?**

The Beacom College of Computer and Cyber Sciences seeks to add a new specialization, Artificial Intelligence/Machine Learning, to the BS in Computer Science. The current faculty recruiting cycle will result in the faculty talent to be able to offer the courses necessary.

Given the mission specificity within the Beacom College, and the size and complexity of the college (30+ FTE Faculty) and its programs (Computer Game Design, B.S., Computer Science, B.S., Cyber Operations, B.S., Network and Security Administration, B.S. and other minors and certificates), DSU and the Beacom College is the appropriate place to offer this specialization. All the courses listed in the specialization are existing courses, so no new courses will be required.

1. **Provide a justification for the specialization, including the potential benefits to students and potential workforce demand for those who graduate with the credential.[[1]](#footnote-1)**

Adding the Artificial Intelligence/Machine Learning specialization to the curriculum of the Beacom College is consistent with the board-designated mission of the college and of Dakota State University and supports our system, university and college goals pertaining to student success (this specialization will enhance student success), contribute to the state’s workforce and economic development as this program aligns nicely with existing and future state workforce needs. This addition will allow the faculty of the Beacom College to provide the modern applications for machine learning, including recommendation systems, streaming analytics, deep learning and cognitive computing. Our students will be the recipients of navigating both organizational and technological challenges to adopt machine learning and embark on their own analytics evolution.

1. **List the proposed curriculum for the specialization (including the requirements for completing the major – *highlight courses in the specialization*):**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Prefix** | **Number** | **Course Title***(add or delete rows as needed)* | **Credit Hours** | **New****(yes, no)** |
| CSC  | 447 | Artificial Intelligence | 3 | No |
| CSC | 483 | Machine Learning Fundamentals | 3 | No |
| Pick 6 credits from the following | 6 | Choose an item. |
| CIS | 368 | Predictive Analytics | 3 | No |
| CIS | 372 | Programming for Analytics | 3 | No |
| CIS | 474 | Business Intelligence and Big Data | 3 | No |
| CSC | 486 | Data Mining Methods | 3 | No |
| Total number of hours required for completion of specialization |  | 12 |
| Total number of hours required for completion of major |  | 57 |
| Total number of hours required for completion of degree |  | 120 |

1. **Delivery Location[[2]](#footnote-2)**

**A. Complete the following charts to indicate if the university seeks authorization to deliver the entire program on campus, at any off-campus location (e.g., UC Sioux Falls, Capital University Center, Black Hills State University-Rapid City, etc.) or deliver the entire program through distance technology (e.g., as an on-line program)?**

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| --- | --- | --- |
|  | **Yes/No** | ***Intended Start Date*** |
| **On campus** | Yes | **Fall 2018** |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Yes/No** | ***If Yes, list location(s)*** | ***Intended Start Date*** |
| **Off campus** | No |  | Choose an item.Choose an item. |

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Yes/No** | ***If Yes, identify delivery methods[[3]](#footnote-3)*** | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | Yes | DSU uses D2L as its course management system | **Fall 2018**  |

**B. Complete the following chart to indicate if the university seeks authorization to deliver more than 50% but less than 100% of the certificate through distance learning (e.g., as an on-line program)? [[4]](#footnote-4)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Yes/No** | ***If Yes, identify delivery methods*** | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | No |  | Choose an item.Choose an item. |

1. **Additional Information:** *Additional information is optional. Use this space to provide pertinent information not requested above. Limit the number and length of additional attachments. Identify all attachments with capital letters. Letters of support are not necessary and are rarely included with Board materials. The University may include responses to questions from the Board or the Executive Director as appendices to the original proposal where applicable. Delete this item if not used.*
1. For workforce related information, please provide data and examples; data sources may include but are not limited to the South Dakota Department of Labor, the US Bureau of Labor Statistics, Regental system dashboards, etc. [↑](#footnote-ref-1)
2. The Higher Learning Commission (HLC) and Board of Regents policy requires approval for a university to offer programs off-campus and through distance delivery. [↑](#footnote-ref-2)
3. Delivery methods are defined in [AAC Guideline 5.5](https://www.sdbor.edu/administrative-offices/academics/academic-affairs-guidelines/Documents/5_Guidelines/5_5_Guideline.pdf). [↑](#footnote-ref-3)
4. This question responds to HLC definitions for distance delivery. [↑](#footnote-ref-4)