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|  | **SOUTH DAKOTA BOARD OF REGENTS**ACADEMIC AFFAIRS FORMS |
| New Specialization |
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Use this form to propose a new specialization within an existing degree program. Specializations provide students with an alternative to the primary format of the major or it may be one of several tracks within a broad major. Specializations contain courses within the discipline(s) of the existing program. Specializations appear in the institutional catalog and on the transcript. Majors that offer specializations typically have one-third to two-thirds of the credits in common with the remaining course work fulfilling the requirements of the specialization(s) offered. The Board of Regents, Executive Director, and/or their designees may request additional information about the proposal. After the university President approves the proposal, submit a signed copy to the Executive Director through the system Chief Academic Officer. Only post the New Specialization Form to the university website for review by other universities after approval by the Executive Director and Chief Academic Officer.

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| **UNIVERSITY:** | DSU |
| **TITLE OF PROPOSED SPECIALIZATION:** | Cybersecurity |
| **NAME OF DEGREE PROGRAM IN WHICH SPECIALIZATION IS OFFERED:** | Master of Science in Artificial Intelligence |
| **BANNER PROGRAM CODE:** | DMS.AI |
| **INTENDED DATE OF IMPLEMENTATION:** | 8/18/2025 |
| **PROPOSED CIP CODE:** | 11.0102 |
| **UNIVERSITY DEPARTMENT:** | Beacom College of Computer and Cyber Sciences |
| **BANNER DEPARTMENT CODE:** | DCOC |
| **UNIVERSITY DIVISION:** | Artificial Intelligence |
| **BANNER DIVISION CODE:** | DSCI |

[x] **Please check this box to confirm that:**

* The individual preparing this request has read [AAC Guideline 2.3.2.2.B](https://public.powerdms.com/SDRegents/documents/1677061), which pertains to new specialization requests, and that this request meets the requirements outlined in the guidelines.
* This request will not be posted to the university website for review of the Academic Affairs Committee until it is approved by the Executive Director and Chief Academic Officer.

**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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| A picture containing text  Description automatically generated |  | 11/18/2024 |
| Institutional Approval Signature*President or Chief Academic Officer of the University* |  | Date |

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Note: In the responses below, references to external sources, including data sources, should be documented with a footnote (including web addresses where applicable).

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

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

1. **What is the nature/purpose of the proposed specialization? Please include a brief (1-2 sentence) description of the academic field in this specialization.**

The Master of Science in Artificial Intelligence (MSAI) program is for students who desire to acquire advanced knowledge in the rapidly growing field of AI (Artificial Intelligence). The program is designed to teach students the core foundations of the field by providing a comprehensive curriculum of the core components of AI, including computer science, mathematics & statistics, and current AI models and frameworks, which will allow them to create practical applications for various industries and academic purposes. With new AI technologies appearing yearly, this program is designed to provide the foundations needed to be successful and agile enough to bring new and emergent technologies to students.

The proposed specialization in Artificial Intelligence (AI) and Cybersecurity aims to address the critical need for professionals skilled at the intersection of these two transformative fields. As the rapid advancement and adoption of AI reshape industries and create new paradigms in cybersecurity, this program is designed to equip graduates with the expertise to develop, implement, and manage AI-driven security solutions across various sectors. By combining foundational and advanced knowledge in both AI and cybersecurity, the specialization prepares graduates to anticipate, analyze, and counteract emerging threats, enabling them to protect sensitive data, ensure privacy, and secure complex digital infrastructures. This specialization not only strengthens DSU’s cyber focus but also enhances our students' versatility, preparing them to assume critical roles across industries and contribute to a resilient and adaptive cybersecurity workforce.

1. **Provide a justification for the specialization, including the potential benefits to students and potential workforce demand for those who graduate with the credential.** *For workforce related information, please provide data and examples. Data may include, but are not limited to the South Dakota Department of Labor, the US Bureau of Labor Statistics, Regental system dashboards, etc. Please cite any sources in a footnote.*

The proposed specialization in AI and Cybersecurity is justified by the increasing convergence of these two critical fields. As cyber threats become more sophisticated, leveraging artificial intelligence is essential for developing advanced security solutions. For students, this specialization offers the opportunity to acquire a unique skill set that combines expertise in AI algorithms with practical cybersecurity strategies, enhancing their competitiveness in the job market.

According to the U.S. Bureau of Labor Statistics, employment of information security analysts is projected to grow 35% from 2021 to 2031, outpacing the national average for all occupations. The demand is even higher for professionals who can integrate AI into cybersecurity practices. Industry reports highlight a nationwide shortage of skilled experts in both AI and cybersecurity sectors, indicating strong workforce demand for graduates with this combined knowledge.

Graduates of this specialization will be well-positioned for roles such as AI cybersecurity specialists, machine learning security engineers, and AI threat analysts. These positions are vital for organizations aiming to protect their digital assets against sophisticated cyber-attacks using AI-enhanced methods. Offering this specialization aligns with our commitment to innovation and excellence, ensuring our graduates are both workforce-ready and leaders in the fast-evolving fields of AI and cybersecurity.

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

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| **MS Artificial Intelligence Core**  |
| **Prefix** | **Number** | **Course Title***(add or delete rows as needed)* | **Credit Hours** | **New****(yes, no)** |
| CSC | 722 | Machine Learning Fundamentals | 3 | No |
| CSC | 726 | Neural Networks | 3 | No |
| CSC | 727 | Professional Applications and Ethics of AI | 3 | No |
| CSC | 789 | Capstone | 3 | No |
| CSC |  | 1 AI Elective (CSC 761 required if insufficient AI background) | 3 | No |
| Total number of hours required for completion of core |  | 15 |

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| **Cybersecurity Specialization** |
| **Prefix** | **Number** | **Course Title***(add or delete rows as needed)* | **Credit Hours** | **New****(yes, no)** |
| CSC | 723 | Machine Learning for Cyber Security | 3 | No |
| INFA | 732 | Malware Analysis | 3 | No |
| INFA | 735 | Offensive Security | 3 | No |
| INFA | 754 | Network Security Monitoring and Intrusion Detection | 3 | No |
| CSC/INFA/INFS |  | 1 Cybersecurity Electives | 3 | No |
| Total number of hours required for completion of specialization |  | 15 |
| Total number of hours required for completion of major |  | 30 |
| Total number of hours required for completion of degree |  | 30 |

1. **Delivery Location**

*Note: The accreditation requirements of the Higher Learning Commission (HLC) require Board approval for a university to offer programs off-campus and through distance delivery.*

**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 specialization through distance technology (e.g., as an on-line program)?**

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|  | **Yes/No** | ***Intended Start Date*** |
| **On campus** | Yes | **August, 2025**Click here to enter text. |

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

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|  | **Yes/No** | ***If Yes, identify delivery methods****Delivery methods are defined in AAC Guideline* [*2.4.3.B*](https://public.powerdms.com/SDRegents/documents/1677940)*.* | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | Yes |  | **August, 2025**  |

**B. Complete the following chart to indicate if the university seeks authorization to deliver more than 50% but less than 100% of the specialization through distance learning (e.g., as an on-line program)?** *This question responds to HLC definitions for distance delivery.*

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|  | **Yes/No** | ***If Yes, identify delivery methods*** | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | Yes | Asynchronous Online | **August, 2025** 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.*