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| S:\Communications\Logos and photos\SDBORLogos\final_sdbor_webreadyBW_trans.gif | **SOUTH DAKOTA BOARD OF REGENTS**  ACADEMIC AFFAIRS FORMS |
| Substantive Program Modification Form |
|  |  |

Use this form to request minor changes in existing programs (majors, minors, certificates, or specializations).

|  |  |
| --- | --- |
| **UNIVERSITY:** | DSU |
| **CURRENT PROGRAM TITLE:** | **Ph.D. in Cyber Operations** |
| **CIP CODE:** |  |
| **UNIVERSITY DEPARTMENT:** | **Beacom College of Computer and Cyber Sciences** |
| **UNIVERSITY DIVISION:** |  |

**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.*

|  |  |  |
| --- | --- | --- |
|  |  | 3/4/2022 |
| Vice President of Academic Affairs or  President of the University |  | Date |

|  |
| --- |
|  |

1. **This modification addresses a change in (*place an “X” in the appropriate box*):**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total credits required within the discipline |  | Total credits of supportive course work |
|  |  |  |  |
|  | Total credits of elective course work |  | Total credits required for program |
|  |  |  |  |
|  | Program name |  | Existing specialization |
|  |  |  |  |
|  | CIP Code |  | Other (explain below) |

1. **Effective date of change: 8/22/2022**
2. **Program Degree Level (*place an “X” in the appropriate box*):**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Associate |  | Bachelor’s |  | Master’s |  | Doctoral |  |

1. **Category (*place an “X” in the appropriate box*):**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Certificate |  | Specialization |  | Minor |  | Major |  |

1. **If a name change is proposed, the change will occur (*place an “X” in the appropriate box*):**

|  |  |
| --- | --- |
|  | On the effective date for all students |

|  |  |
| --- | --- |
|  | On the effective date for students new to the program (enrolled students will graduate from existing program) |
|  |

|  |  |
| --- | --- |
| **Proposed new name:** |  |
|  | *Reminder: Name changes may require updating related articulation agreements, site approvals, etc.* |

1. **Primary Aspects of the Modification (*add lines or adjust cell size as needed*):**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Existing Curriculum* | | | | *Proposed Curriculum (highlight changes)* | | | | | |
| **Pref.** | **Num.** | **Title** | **Cr.**  **Hrs.** |  | **Pref.** | | **Num.** | **Title** | **Cr. Hrs.** |
| Core Courses (15 Credits) | | | |  | Core Courses (15 Credits) | | | | |
| CSC | 840 | Cyber Operations I | 3 |  | CSC | | 840 | Cyber Operations I | 3 |
| CSC | 841 | Cyber Operations II | 3 |  | CSC | | 841 | Cyber Operations II | 3 |
| CSC | 844 | Advanced Reverse Engineering | 3 |  | CSC | | 844 | Advanced Reverse Engineering | 3 |
| CSC | 846 | Advanced Malware Analysis | 3 |  | CSC | | 846 | Advanced Malware Analysis | 3 |
| CSC | 848 | Advanced Software Exploitation | 3 |  | CSC | | 848 | Advanced Software Exploitation | 3 |
| Research Core (9 Credits) | | | |  | Research Core (9 Credits) | | | | |
| ~~CSC~~ | ~~803~~ | ~~An Introduction to Cyber Security~~ | 3 |  |  | |  |  |  |
| CSC | 804 | Cyber Security Research Methodology | 3 |  | CSC | | 804 | Computer and Cyber Science Research Methodology | 3 |
| CSC | 807 | Cyber Security Research | 3 |  | CSC | | 807 | Computer and Cyber Science Research Design and Implementation | 3 |
|  |  |  |  |  | CSC | | 890 | Seminar: Research 1 credit each | 3 |
| On-Site Research (3 Credits) | | | |  | On-Site Research (3 Credits) | | | | |
| CSC | 890 | Seminar: On-site Research Seminar 1 credit each | 3 |  | CSC | | 890 | Seminar: On-site Research Seminar 1 credit each | 3 |
| Dissertation ~~(25 Credits)~~ | | | |  | Dissertation (19 Credits) | | | | |
| CSC | 809 | Dissertation Preparation | 3 |  | CSC | | 809 | Dissertation Preparation | 3 |
| CSC | 898D | Dissertation (1-22 credits) | 22 |  | CSC | | 898D | Dissertation (1-16 credits) | 16 |
| Electives ~~(9 Credits)~~ | | | |  | Electives (15 Credits) | | | | |
| Any 700 or 800 level course offering with a CSC, INFA or INFS prefix (subject to elective program approval). | | | |  | Any 700 or 800 level course offering with a CSC, INFA or INFS prefix (subject to elective program approval). | | | | |
|  | | | |  |  | |  |  |  |
| Total number of hours required for major, minor, or specialization | | | 61 |  | | Total number of hours required for major, minor, or specialization | | | 61 |
| Total number of hours required for degree | | | 61 |  | | Total number of hours required for degree | | | 61 |

1. **Explanation of the Change:**

Ph.D. in Cyber Operations program curriculum is modified based on the new restructured research courses in the Beacom College.

* CSC803 An Introduction to Cyber Security Research (3 credits) is eliminated from the research core. The research core now includes requirement of 3 credits CSC890 Seminar (1 credit each). CSC890 Seminar will be offered in the Fall semester each term. Students are required to present approved research papers and participate in discussions in the seminar.
* CSC804 Computer and Cyber Science Research Methodology: minor course name modification due to the restructure of the research courses.
* CSC807 Computer and Cyber Science Research Design and Implementation: minor course name modification due to the restructure of the research courses.
* CSC898D Dissertation and Electives: change dissertation credits from 22 to 16 and increase elective credits from 9 to 15. The changes provide students opportunities to take two more elective courses in cyber operations. This is especially important for the students who are admitted to the program from non-DSU schools. The cyber operations programs including the undergraduate and the graduate programs at DSU prepare students very well for doctoral studies. Allowing two more elective courses will be very beneficial for non-DSU students to utilize the existing curriculum in our cyber operations program. Further, as more graduate courses become available at DSU, e.g., courses in Artificial Intelligence, allowing two more elective courses will also be very beneficial to the students who are admitted to the program from the DSU.