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| A round blue and white logo  Description automatically generated | **SOUTH DAKOTA BOARD OF REGENTS**  ACADEMIC AFFAIRS FORMS | |
| New Course Request | |
|  | |  |

Use this form to request a new common or unique course. Consult the system course database through for information about existing courses before submitting this form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DSU |  | **Beacom College of Computer and Cyber Sciences** | | |
| **Institution** |  | **Division/Department** | | |
| A picture containing text  Description automatically generated | | |  | 2/12/2024 |
| **Institutional Approval Signature** | | |  | **Date** |

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**Section 1. Course Title and Description**

If the course contains a lecture and laboratory component, identify both the lecture and laboratory numbers (xxx and xxxL) and credit hours associated with each. Provide the complete description as you wish it to appear in the system course database, including pre-requisites, co-requisites, and registration restrictions.

|  |  |  |
| --- | --- | --- |
| **Prefix & No.** | **Course Title** | **Credits** |
| CSC 763 | Quantum Computing Fundamentals | 3 |

*NOTE: The Enrollment Services Center assigns the short, abbreviated course title that appears on transcripts. The short title is limited to 30 characters (including spaces); meaningful but concise titles are encouraged due to space limitations in the student information system.*

|  |  |
| --- | --- |
| **Course Description** |  |
| This course provides students with a fundamental understanding of key concepts, principles, and techniques in quantum computing. | |

*NOTE: Course descriptions are short, concise summaries that typically do not exceed 75 words. DO: Address the content of the course and write descriptions using active verbs (e.g., explore, learn, develop, etc.). DO NOT: Repeat the title of the course, layout the syllabus, use pronouns such as “we” and “you,” or rely on specialized jargon, vague phrases, or clichés.*

**Pre-requisites or Co-requisites (add lines as needed)**

|  |  |  |
| --- | --- | --- |
| **Prefix & No.** | **Course Title** | **Pre-Req/Co-Req?** |
| None |  |  |
|  |  |  |

**Registration Restrictions**

|  |
| --- |
| None |

**Section 2. Review of Course**

1. **Will this be a unique or common course (*place an “X” in the appropriate box*)?**

|  |  |
| --- | --- |
|  | **Unique Course**  *If the request is for a unique course, institutions must review the common course catalog in the system course database to determine if a comparable common course already exists. List the two closest course matches in the common course catalog and provide a brief narrative explaining why the proposed course differs from those listed. If a search of the common course catalog determines an existing common course exists, complete the Authority to Offer an Existing Course Form. Courses requested without an attempt to find comparable courses will not be reviewed.* |

|  |  |  |
| --- | --- | --- |
| **Prefix & No.** | **Course Title** | **Credits** |
| PHYS 777 | Intro to Quantum Information | 3 |
|  |  |  |
|  |  |  |
| *Provide explanation of differences between proposed course and existing system catalog courses below:* | | |
| PHYS 777 – The course will provide the basic understanding of the notions and formalism of quantum information, with some elements of quantum computing. This area of knowledge is rapidly developing and likely to lead to technological advances, e.g. quantum computers.  The proposed new course, CSC 763, is unique and distinct from existing courses such as PHYS 777 listed in the catalog. PHYS 777 provides a foundational understanding of the concepts and formalism of quantum information. In contrast, CSC 763 focuses primarily on quantum computing, delving into the fundamental principles of quantum mechanics. It introduces essential elements, including qubits, quantum gates, and quantum circuits for quantum computing. Furthermore, CSC 763 covers additional topics related to quantum computing, such as quantum algorithms, with the objective of preparing students for more advanced subjects in this field. CSC 784 and PHYS 777 are two distinct courses. | | |

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|  | **Common Course** | | | | *Indicate universities that are proposing this common course:* | | | | | | | | |
|  |  | | | |  | | | | | | | | |
|  |  | BHSU |  | DSU | |  | NSU |  | SDSMT |  | SDSU |  | USD |

**Section 3. Other Course Information**

1. **Are there instructional staffing impacts?**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **No**. Replacement of |  | | |
|  |  | (course prefix, course number, name of course, credits) | | |
|  |  | \*Attach course deletion form | | |
|  |  |  | | |
| Effective date of deletion: | | | Click here to enter a date. |  |

|  |  |
| --- | --- |
|  | **No**. Schedule Management, explain below:  DSU will add this course into the rotation with current and newly hired faculty with this expertise. |

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| --- | --- |
|  | **Yes**. Specify below: |

1. **Existing program(s) in which course will be offered (i.e., any current or pending majors, minors, certificates, etc.)**:   
     
   Quantum Computing Certificate.
2. **Proposed instructional method by university *(as defined by*** [*AAC Guideline 5.4*](https://www.sdbor.edu/administrative-offices/academics/academic-affairs-guidelines/Documents/5_Guidelines/5_4_Guideline.pdf)***)*:**

*If requesting an instructional method that is exempt from the* [Section Size Guidelines](https://www.sdbor.edu/administrative-offices/academics/academic-affairs-guidelines/Documents/5_Guidelines/5_7_Guideline.pdf)*, please provide a brief description of how the course is appropriate for the instructional method, as defined in AAC Guidelines.*

Lecture

1. **Proposed delivery method by university *(as defined by*** [*AAC Guideline 5.5*](https://www.sdbor.edu/administrative-offices/academics/academic-affairs-guidelines/Documents/5_Guidelines/5_5_Guideline.pdf)***)*:** D01 Face to Face to face D01; D15 Asynchronous; D18 Synchronous
2. **Term change will be effective**: Fall 2024
3. **Can students repeat the course for additional credit?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Yes, total credit limit: |  |  |  | No |

1. **Will grade for this course be limited to S/U (pass/fail)?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Yes |  | No |

1. **Will section enrollment be capped?**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Yes, max per section: | 25 |  |  | No |

1. **Will this course equate (i.e., be considered the same course for degree completion) with any other unique or common courses in the common course system database?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Yes |  | No |
| *If yes, indicate the course(s) to which the course will equate (add lines as needed):* | | | |
|  | | | |

|  |  |
| --- | --- |
| **Prefix & No.** | **Course Title** |
|  |  |

1. **Is this prefix approved for your university?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Yes |  | No |
| *If no, provide a brief justification below:* | | | |
|  | | | |

**Section 4. Department and Course Codes (Completed by University Academic Affairs)**

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| --- | --- |
| 1. **University Department:** | The Beacom College of Computer and Cyber Sciences |

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| 1. **Banner Department Code:** | DCSI |

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| 1. **Proposed** [**CIP Code**](http://nces.ed.gov/ipeds/cipcode/default.aspx?y=55)**:** | 11.0401 | | | | |
|  |  | | | | |
| *Is this a new CIP code for the university?* | |  | Yes |  | No |