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| S:\Communications\Logos and photos\SDBORLogos\final_sdbor_webreadyBW_trans.gif | **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 database through Colleague or the [Course Inventory Report](http://apps.sdbor.edu/ris-reporting/CourseInventoryOptions.cfm) for information about existing courses before submitting this form.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| DSU |  | College of Arts and Sciences - Mathematics | | |
| **Institution** |  | **Division/Department** | | |
| C:\Users\slaughts\AppData\Local\Microsoft\Windows\INetCache\Content.Word\Dr. McKay Signature.jpg | | |  | 3/28/2018 |
| **Institutional Approval Signature** | | |  | **Date** |

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**Section 1. Existing 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 database in Colleague and the [Course Inventory Report](http://apps.sdbor.edu/ris-reporting/CourseInventoryOptions.cfm) including pre-requisites, co-requisites, and registration restrictions.

|  |  |  |
| --- | --- | --- |
| **Prefix & No.** | **Course Title** | **Credits** |
| MATH 436, 536 | Number Theory and Cryptography | 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 Colleague.*

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| --- | --- |
| **Course Description** |  |
| An introduction to Number Theory and Computational Number Theory and the mathematical foundations of cryptography (classical cryptography; public key cryptography; cryptosystems; cryptographic protocols). Topics to be selected from divisibility theory; primes and their distribution; primality testing; factorization and factorization algorithms; computations with large integers (FFT), theory of congruences and applications; Euler's Theorem; primitive roots; quadratic reciprocity; arithmetic functions; Moebius inversion; zeta functions; introduction to cryptography; cryptographic communications; and information security algorithms and protocols. | |

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

|  |  |  |
| --- | --- | --- |
| **Prefix & No.** | **Course Title** | **Pre-Req / Co-Req?** |
| MATH 201 | Introduction to Discrete Mathematics | Pre-Req |
| CSC 250 | Computer Science II | Pre-Req |

**Registration Restrictions:** None

**Section 2. Review of Course**

1. **Was the course first offered as an experimental course (*place an “X” in the appropriate box*)?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Yes (*if yes, provide the course information below)* |  | No |

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

*If the request is for a unique course, verify that you have reviewed the common course catalog via Colleague and the system* [*Course Inventory Report*](http://apps.sdbor.edu/ris-reporting/CourseInventoryOptions.cfm) *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.*

|  |  |
| --- | --- |
|  | **Unique Course** |

|  |  |  |
| --- | --- | --- |
| **Prefix & No.** | **Course Title** | **Credits** |
| MATH 411 | Number Theory | 3 |
| MATH 413 | Abstract Algebra | 3 |
| *Provide explanation of differences between proposed course and existing system catalog courses below:* | | |
| Although the content in these courses will overlap, the presentations will be very different as the focus will be on how the concepts are applied in cryptography and how to do the calculations using technology. | | |

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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: This course will be offered in the  rotation of math courses and therefore can be absorbed into the present faculty load. | | | | |

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

1. **Existing program(s) in which course will be offered**: Included in the Graduate Mathematics Certificate, the Foundations of Cryptography Certificate, and as an elective in the mathematics major.
2. **Proposed instructional method by university**: Lecture (R)
3. **Proposed delivery method by university**: Face to Face and Online (010 and 018)
4. **Term change will be effective**: Fall 2019
5. **Can students repeat the course for additional credit?**

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| --- | --- | --- | --- | --- | --- |
|  | 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?**

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| --- | --- | --- | --- | --- | --- |
|  | Yes, max per section: | 35 |  |  | 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 in Colleague and the** [**Course Inventory Report**](http://apps.sdbor.edu/ris-reporting/CourseInventoryOptions.cfm)**?**

|  |  |  |  |
| --- | --- | --- | --- |
|  | 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?**

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| --- | --- | --- | --- |
|  | 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 Code:** | DMATH |

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| 1. **Proposed** [**CIP Code**](http://nces.ed.gov/ipeds/cipcode/default.aspx?y=55)**:** | 27.0101 | | | |
|  |  | | | |
| *Is this a new CIP code for the university?* |  | Yes |  | No |