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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:** | **Secondary Education Specialization** |
| **NAME OF DEGREE PROGRAM IN WHICH SPECIALIZATION IS OFFERED:** | **B.S. in Mathematics** |
| **INTENDED DATE OF IMPLEMENTATION:** | **8/3/2018** |
| **PROPOSED CIP CODE:** | **27.0101** |
| **UNIVERSITY DEPARTMENT:** | **College of Arts and Sciences** |
| **UNIVERSITY DIVISION:** | **Mathematics** |

**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 |  | 5/2/2018 |
| 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*):**

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| --- | --- | --- | --- | --- | --- |
| Baccalaureate |  | Master’s |  | Doctoral |  |

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

Students that complete the Mathematics program with a Secondary Education specialization will be well prepared to be high school mathematics teachers as well as middle school mathematics teachers. Program completers will meet the state of SD Department of Education criteria for the secondary education endorsement, this is a traditional secondary mathematics program that will be recognized by other states. As an education program, there is an education component that is required for this specialization and students are required to complete the K-12 Educational Technology Minor (each of the math specializations has a technology minor requirement).

1. **Provide a justification for the specialization, including the potential benefits to students and potential workforce demand for those who graduate with the credential.**

The American Mathematical Society has shown that the “Intensity of math competencies in its purest form over time is increasing” ([http://www.ams.org/about-us/governance/committees/ Jaco.pdf](http://www.ams.org/about-us/governance/committees/%20Jaco.pdf)). The mathematics specializations are designed to provide mathematics training to prepare students for the mathematical career path of their choice; career paths in education (intermediate level or secondary level) and technology (information systems or cryptography).

According to the U.S. Bureau of Labor Statistics there is a projected national job growth (2016 – 2024) for mathematicians of 33%.[[1]](#footnote-1) The Bureau of Labor Statistics projects a 15.7% increase in demand for math teachers in the state of South Dakota by 2024 and nationally an increase in demand by 16.4%.[[2]](#footnote-2)

Math Education is a critical teaching need in the state of South Dakota and there is a scholarship called the “South Dakota Critical Teaching Needs Scholarship” administered by the Board of Regents to support students majoring in math education (as well as other critical need programs) in the last two years of their programs.[[3]](#footnote-3)

This specialization is the current Math Education program delivered by Dakota State University. Instead of having four different undergraduate math programs we propose combining the math programs under one umbrella.

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

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| **Pref.** | **Num.** | **Title** | **Cr. Hrs.** | **New**  **(Yes or No)** |
| **System Wide General Education Requirement**  (All students are required to take MATH 123 as part of the general education requirements) | | | **30** |  |
|  | | | |  |
| **Mathematics Core Requirements** | | | **12** |  |
| MATH | 201 | Introduction to Discrete Math | 3 | No |
| MATH | 281 | Introduction to Statistics | 3 | No |
| MATH | 315 | Linear Algebra | 3 | No |
| MATH | 316 | Discrete Mathematics | 3 | No |
|  |  |  |  |  |
| **Secondary Education Specialization**  (Student must take EPSY 210 & INED 211 as part of the general education requirements) | | |  |  |
| **Mathematics Component** | | | **23** |  |
| MATH | 125 | Calculus II | 4 | No |
| MATH | 341 | Math Concepts for Teachers I | 3 | No |
| MATH | 342 | Math Concepts for Teachers II | 3 | No |
| MATH | 361 | Modern Geometry | 3 | No |
| MATH | 413 | Abstract Algebra | 3 | No |
| MATH | 488 | Capstone | 1 | No |
| Choose 6 credits from the following | | | 6 |  |
| MATH | 225 | Calculus III | 4 | No |
| MATH | 282 | Mathematics of Games | 3 | No |
| MATH | 318 | Adv. Discrete Mathematics | 3 | No |
| MATH | 321 | Differential Equations | 3-4 | No |
| MATH | 381 | Intro to Probability and Stats | 3-4 | No |
| MATH | 418 | Mathematical Modeling | 3 | No |
| MATH | 436 | Number Theory and Cryptography | 3 | Yes |
| MATH | 437 | Cryptography and Codes | 3 | Yes |
| MATH | 471 | Numerical Analysis I | 3 | No |
| MATH | 475 | Operations Research | 3 | No |
| MATH | 492 | Topics | 1-6\* | No |
| MATH | 498 | Undergrad Research/Scholarship | 1-6 | No |
| \*May be repeated provided student does not enroll in the same topics course. | | | |  |
|  |  |  |  |  |
| **K-12 Educational Technology Minor** | | | **18-19** |  |
| CSC | 105 | Introduction to Computers | 3 | No |
| CIS | 350 | Computer Hardware, Data Communications and Networking | 3 | No |
| EDFN | 365 | Computer-Based Technology & Learning | 3 | No |
| SEED | 401 | Methods of Educational Technology | 1 | No |
| Choose one course from the following | | | 3 |  |
| CIS | 123 | Problem Solving and Programming | No |
| CIS | 130 | Visual Basic Programming | No |
| CSC | 150 | Computer Science I | No |
| Choose three courses from the following | | | 3 |  |
| CIS | 206 | Advanced Applications: | No |
| CIS | 207 | Advanced Applications: Spreadsheet | No |
| CIS | 208 | Advanced Applications: Database | No |
| CIS | 209 | Advanced Applications: SAS | No |
| CIS | 210 | Quickbooks | No |
| Choose one course from the following | | | 2-3 |  |
| SEED | 301 | Technology for Math Teachers | No |
| EDER | 415 | Educational Assessment | No |
| ELED | 422 | K-8 Science and Math Technology | No |
|  |  |  |  |  |
| **Education Component** | | | **27** |  |
| SPED | 100 | Introduction to Persons with Exceptionalities | 3 | No |
| EDFN | 338 | Foundations of American Ed | 2 | No |
| EDFN | 475 | Human Relations | 3 | No |
| EPSY | 302 | Educational Psychology | 3 | No |
| SEED | 295 | Practicum | 1 | No |
| SEED | 302 | Secondary/Middle/Content Area Major | 2 | No |
| SEED | 440 | Classroom Management | 2 | No |
| SEED | 450 | Reading and content Literacy | 3 | No |
| SEED | 488 | 7-12 Student Teaching | 8 | No |
| **Electives** |  |  | **9-10** |  |
| Total number of hours required for completion of specialization | | | 23 |  |
| Total number of hours required for completion of major | | | 80 |  |
| Total number of hours required for completion of degree | | | 120 |  |

1. **Delivery Location[[4]](#footnote-4)**

**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** |

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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[[5]](#footnote-5)*** | ***Intended Start Date*** |
| **Distance Delivery (online/other distance delivery methods)** | No |  |  |

**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)? [[6]](#footnote-6)**

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| --- | --- | --- | --- |
|  | **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. Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, Mathematicians and Statisticians, on the Internet at <https://www.bls.gov/ooh/math/mathematicians-and-statisticians.htm> (visited *May 14, 2018*). [↑](#footnote-ref-1)
2. <http://www.projectionscentral.com/Projections/LongTerm> [↑](#footnote-ref-2)
3. <https://www.sdbor.edu/teachers-counselors/Documents/Scholarship-Opportunities.pdf> [↑](#footnote-ref-3)
4. 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-4)
5. 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-5)
6. This question responds to HLC definitions for distance delivery. [↑](#footnote-ref-6)