SOUTH DAKOTA BOARD OF REGENTS

Academic and Student Affairs

****

SUBJECT
New Undergraduate Certificate Request – BHSU, DSU, NSU, SDSMT, SDSU, & USD – Gateway to Digital Technology

CONTROLLING STATUTE, RULE, OR POLICY
BOR Policy 2.3.2 – New Programs, Program Modifications, and Inactivation/Termination

BACKGROUND / DISCUSSION
Black Hills State University (BHSU), Dakota State University (DSU), Northern State University (NSU), South Dakota School of Mines & Technology (SDSMT), South Dakota State University (SDSU), and the University of South Dakota (USD) request authorization to offer an undergraduate certificate in Gateway to Digital Technology. This certificate provides a jumpstart for South Dakota high school students with a career interest in digital technology, including disciplines like computer science, information systems, networking, artificial intelligence, cybersecurity, web development, health informatics, and data analytics. Courses taken in the certificate will be stackable into academic degrees in those related fields.

This certificate is part of a larger initiative to offer certificates to high school students participating in the HSDC program.

IMPACT AND RECOMMENDATION
The proposed certificate will be offered on campus, online, and at approved In-District delivery sites for HSDC. New resources are not requested. No new courses will be required.

Board office staff recommends approval.

ATTACHMENTS
Attachment I – New Certificate Request Form: BHSU, DSU NSU, SDSMT, SDSU, and USD – Gateway to Digital Technology

****

DRAFT MOTION 20250402_6-B(2):
I move to authorize BHSU, DSU NSU, SDSMT, SDSU, and USD to offer an undergraduate certificate in Gateway to Digital Technology, as presented.

SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

New Certificate

Use this form to propose a certificate program at either the undergraduate or graduate level. A certificate program is a sequence, pattern, or group of academic credit courses that focus upon an area of specialized knowledge or information and develop a specific skill set. Certificate programs typically are a subset of the curriculum offered in degree programs, include previously approved courses, and involve 9-12 credit hours including prerequisites. In some cases, standards for licensure will state explicit requirements leading to certificate programs requiring more than 12 credit hours (in such cases, exceptions to course or credit requirements must be justified and approved). 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 Certificate Form to the university website for review by other universities after approval by the Executive Director and Chief Academic Officer.

UNIVERSITY:	**DSU**
TITLE OF PROPOSED CERTIFICATE:	**Gateway to Digital Technology**
INTENDED DATE OF IMPLEMENTATION:	**Summer 2025**
PROPOSED CIP CODE:	**11.0101**
UNIVERSITY DEPARTMENT:	**BHSU- School of Math & Social Sciences** **DSU – Computer Science** **NSU - Management Information Systems** **SDSMT – Electrical Engineering and Computer Science** **SDSU – Electrical Engineering and Computer Science** **USD – Computer Science**
BANNER DEPARTMENT CODE:	**BHSU- BSMS** **DSU – DCOC** **NSU - NMIS** **SDSMT - MECS** **SDSU - SEEC** **USD - UCSC**
UNIVERSITY DIVISION:	**BHSU- College of Liberal Arts** **DSU – Beacom College of Computer & Cyber Science** **NSU - School of Business** **SDSMT – Science & Letters** **SDSU – Lohr College of Engineering** **USD – College of Arts & Science**
BANNER DIVISION CODE:	**BHSU-6A** **DSU – 8N** **NSU - 5B** **SDSMT – 4L** **SDSU – 3E** **USD – 2A**

☒ **Please check this box to confirm that:**

- The individual preparing this request has read [AAC Guideline 2.3.2.2.C](), which pertains to new certificate 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.

Elizabeth M. Freeburg	**USD**	2/20/2025
Institutional Approval Signature		Date
President or Chief Academic Officer of the University		
Pamela Carriveau	**BHSU**	2/20/2025
Institutional Approval Signature		Date
President or Chief Academic Officer of the University		
Rebecca Hoey	**DSU**	2/20/2025
Institutional Approval Signature		Date
President or Chief Academic Officer of the University		
Erin Fouberg	**NSU**	2/20/2025
Institutional Approval Signature		Date
President or Chief Academic Officer of the University		
Teresa Seefeldt	**SDSU**	2/20/2025
Institutional Approval Signature		Date
President or Chief Academic Officer of the University		
Darcy Briggs	**SDSMT**	2/20/2025
Institutional Approval Signature		Date
President or Chief Academic Officer of the University		

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

1. **Is this a graduate-level certificate or undergraduate-level certificate (*place an "X" in the appropriate box*)?**

   Undergraduate Certificate ☒   Graduate Certificate ☐

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

This certificate provides a jumpstart for South Dakota high school students with a career interest in digital technology, including disciplines like computer science, information systems, networking, artificial intelligence, cybersecurity, web development, health informatics, and data analytics. Courses taken in the certificate will be stackable into academic degrees in those related fields.

3. **If you do not have a major in this field, explain how the proposed certificate relates to your university mission and strategic plan, and to the current Board of Regents Strategic Plan 2014-2020.**
   Links to the applicable State statute, Board Policy, and the Board of Regents Strategic Plan are listed below for each campus.
BHSU:	*[SDCL § 13-59]()*	*[BOR Policy 1.2.1]()*
DSU:	*[SDCL § 13-59]()*	*[BOR Policy 1.2.2]()*
NSU:	*[SDCL § 13-59]()*	*[BOR Policy 1.2.3]()*

Universities offering the certificate have majors in the broad field of digital technology.

4. **Provide a justification for the certificate program, 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 U.S. Bureau of Labor Statistics projects jobs in computer and information technology are projected to grow much faster than average for all occupations from 2023-2033 (Occupational Outlook Handbook 2024). The median wage for employees in this field was $104,420 in May 2023, significantly higher than the national median annual wage of $48,060. In South Dakota, information security analysts and software developers, analysts and testers rank #4 and #9 respectively in the top ten occupations with the highest projected growth between 2020 and 2030 (Department of Labor and Regulations, 2022). The state projects openings for information security analysts will grow 42.2% and software developers, analysts and testers will grow 29.9% in that timeframe. It is critical to the economic development of the state to ensure there are sufficient highly qualified workers in the broad field of digital technology. High salaries for these projected openings will contribute to the flourishing and prosperity of South Dakotans. Early exposure to, and preparation in digital technology for high school students will strengthen the pipeline of prospective highly skilled workers and reduce time and cost to completion of bachelor's degrees in this growing field.

   Sources:
   Occupational Outlook Handbook (2024). Retrieved from https://www.bls.gov/ooh/computer-and-information-technology/home.htm

   South Dakota e-Labor Bulletin (2022, September). South Dakota Department of Labor and Regulations. Retrieved from https://dlr.sd.gov/lmic/lb/2022/lbart_sept22_occupational_projections_2020_2030.aspx

5. **Who is the intended audience for the certificate program (including but not limited to the majors/degree programs from which students are expected)?**
   The intended audience is South Dakota high school juniors and seniors interested in earning college credit through the state's dual credit program.

6. **Certificate Design**
   A. **Is the certificate designed as a stand-alone education credential option for students not seeking additional credentials (i.e., a bachelor's or master's degree)? If so, what areas of high workforce demand or specialized body of knowledge will be addressed through this certificate?** No

   B. **Is the certificate a value added credential that supplements a student's major field of study? If so, list the majors/programs from which students would most benefit from adding the certificate.** No

C. Is the certificate a stackable credential with credits that apply to a higher level credential (i.e., associate, bachelor's, or master's degree)? If so, indicate the program(s) to which the certificate stacks and the number of credits from the certificate that can be applied to the program.

Yes, this certificate is intended to be stackable; credits taken as part of the certificate will contribute to general education requirements and major requirements in several associate and bachelor's degree programs.

7. **List the courses required for completion of the certificate in the table below (if any new courses are proposed for the certificate, please attach the new course requests to this form).**

   Certificate programs by design are limited in the number of credit hours required for completion. Certificate programs consist of nine (9) to twelve (12) credit hours, including prerequisite courses. In addition, certificates typically involve existing courses. If the curriculum consists of more than twelve (12) credit hours (including prerequisites) or includes new courses, please provide explanation and justification below.

Prefix	Number	Course Title	Prerequisites for Course	Credit Hours	New (yes, no)
Choose one programming course from the following:					
CSC	115	Test-Driven Software Development	MATH 123	3	No
CSC	150/L	Computer Science I	None	3	No
CSC	155/L	Introduction to Computer Science	None	4	No
CSC	170/L	Programming for Engineers and Scientists	MATH 123	3/1	No
INFO	101	Introduction to Informatics	None	3	No
Choose one digital technology course from the following:					
CENG	142/142L	Intro to Digital Systems w/Lab	MATH 114	3	No
CSC	101	Digital Humanities	None	3	No
CSC	134	Introduction to Cyber	None	3	No
CSC	147	Survey of Artificial Intelligence	None	3	No
CSC	163	Hardware, Virtualization, and Data Communication	None	3	No
Choose one math course from the following:					
MATH	114 or higher		MATH 101, MATH 103, or placement	3-4	No
Choose one Social Science or Arts & Humanities course from the following:					
INFO/ PHIL	102	Data Ethics	None	3	No
PHIL	200	Introduction to Logic	None	3	No
PHIL	220	Introduction to Ethics	None	3	No
SOC	285	Society and Technology	None	3	No
			Subtotal	**12-14**	

8. **Student Outcome and Demonstration of Individual Achievement.**

   Board Policy 2:23 requires certificate programs to "have specifically defined student learning outcomes.

A. What specific knowledge and competencies, including technology competencies, will all students demonstrate before graduation? *The knowledge and competencies should be specific to the program and not routinely expected of all university graduates.*

At the conclusion of the certificate, students will be able to:
- o Apply foundational programming concepts including sequence, selection, repetition, functions, and arrays to develop algorithms and solve problems effectively using basic computer programming skills.
- o Demonstrate awareness of the functions, applications, and potential impacts of digital technologies such as artificial intelligence, cybersecurity, and data analytics to build foundational knowledge for navigating and utilizing these technologies effectively.
- o Discuss ethical issues related to the use of technology, such as privacy, data security, and the impact of digital technologies on society.
- o Demonstrate competence in mathematical principles and techniques essential for advanced study in digital technologies.

B. Complete the table below to list specific learning outcomes – knowledge and competencies – for courses in the proposed program in each row. <u>*Label each column heading with a course prefix and number. Indicate required courses with an asterisk (*). Indicate with an X in the corresponding table cell for any student outcomes that will be met by the courses included. All students should acquire the program knowledge and competencies regardless of the electives selected. Modify the table as necessary to provide the requested information for the proposed program.*</u>

	Program Courses that Address the Outcomes			
Individual Student Outcome (Same as in the text of the proposal)	Computer Programming	Digital Technologies	Ethics and Issues	Math
Apply foundational programming concepts including sequence, selection, repetition, functions, and arrays to develop algorithms and solve problems effectively using basic computer programming skills.	X			
Demonstrate awareness of the functions, applications, and potential impacts of digital technologies such as artificial intelligence, cybersecurity, and data analytics to build foundational knowledge for navigating and utilizing these technologies effectively.		X		
Discuss ethical issues related to the use of technology, such as privacy, data security, and the impact of digital technologies on society.			X	
Demonstrate competence in mathematical principles and techniques essential for advanced study in digital technologies.				X

Modify the table as necessary to include all student outcomes. Outcomes in this table are to be the same ones identified in the text.

9. 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., USD Community College for Sioux Falls, Black Hills State University-Rapid City, Capital City Campus, etc.) or deliver the entire program through distance technology (e.g., as an on-line program)?**

	Yes/No	*Intended Start Date*
On campus	Yes	**Summer 2025**

	Yes/No	*If Yes, list location(s)*	*Intended Start Date*
Off campus	Yes	In-district where approved	**Summer 2025**

	Yes/No	*If Yes, identify delivery methods* *Delivery methods are defined in AAC Guideline 2.4.3.B.*	*Intended Start Date*
Distance Delivery (online/other distance delivery methods)	Yes	X15, X18	**Summer 2025**
Does another BOR institution already have authorization to offer the program online?	No	**If yes, identify institutions:**	

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)?** *This question responds to HLC definitions for distance delivery.*

	Yes/No	*If Yes, identify delivery methods*	*Intended Start Date*
Distance Delivery (online/other distance delivery methods)	No		

10. **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.*