SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

New Graduate Degree Program

UNIVERSITY:	**DSU and SDSU**
PROPOSED GRADUATE PROGRAM:	**Doctor of Philosophy (Ph. D.) in Computer Science (DSU and SDSU)**

The program is consistent with SDSU's current strategic plan Imagine 2023: Aspire. Discover. Achieve.[7] Imagine 2023 includes the over-arching strategic goal: Foster Innovation and

Occupation Title	SOC Code	Employment 2016	Employment 2026	Employment Change 2016-2026	Employment Change Percent	Occupational Openings	2016 Median Annual Wage
Computer science teachers, postsecondary	25-1021	39.7					

Elective Courses: List courses available as electives in the program. Indicate any proposed new courses added specifically for the program.

Complete 18 credits with two courses from each of the 3 areas listed below. Theory, Systems, Application.

Prefix	Number	Course Title	Locations	Credit Hours	New (yes, no)
INFS	730	Web Application Development	DSU	3	No
INFS	736	Technology for Mobile Devices	DSU	3	No
INFS	764	Information Retrieval	DSU	3	No
INFS	766	Advanced Databased	DSU	3	No
MATH	773	Numerical Optimization	SDSU	3	No
MATH	774	Advanced Scientific Computation	SDSU	3	No

Dissertation:
With advisor approval, credits will be applied for work related to students' dissertation research.

- DSU students will be required to take the following as part of Dissertation work:
  CSC 804 – Research Methodologies (3 cr.)
  CSC 809 – Dissertation Preparation (3 cr.)

6. Student Outcomes and Demonstration of Individual Achievement

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.* **Complete Appendix A Outcomes using the system form.** *Outcomes discussed below should be the same as those in Appendix A.*

The student learning outcomes were developed to ensure that all graduates are prepared to enter employment in industry, as post-doctoral researchers, or faculty in higher education. Upon graduation, graduates of either school will:

- Be able to demonstrate a broad and comprehensive understanding of core knowledge and fundamental principles in computer science.
-

Mastery will be demonstrated through assessment of the student learning outcomes. Specifically, upon completion of courses students will have demonstrated mastery through the following assessment measures:

- In individual classes, mastery will be demonstrated by written tests, written papers, oral presentations, and programming projects.
- All students will be required to take a written comprehensive examination of the 6 course courses required of all students.
- All students will be required to hold an oral defense of their dissertation work which can include questions on all courses taken by the student.

DSU and SDSU graduate policies require that the program submit an annual assessment report on achievement of student learning outcomes. Once the program is approved, program faculty will meet to ensure a common set of policies, guidelines, and expectations are in place.

7. **What instructional approaches and technologies will instructors use to teach courses in the program?** *This refers to the instructional technologies and approaches used to teach courses and NOT the technology applications and approaches expected of students.*

The proposed Ph.D. in Computer Science will be offered in both face-to-face and online classes between schools. A number of instructional strategies which capitalize on the use of classroom-based and distributed technologies will be used. Those approaches include seminar, labs, guided research and other interaction heavy components between instructor and doctoral students that encourage the participation of the students. Courses will be supported with D2L courseware for virtual networking, assignment submission, and class discussion. Other applications and tools will encourage small group collaborations, virtual information sessions. Point-to-point and multi-user video platforms will support

information (phone numbers, e-mail addresses, URLs, etc.) for accrediting bodies and/or journal editors who may be able to assist the Board staff with the identification of consultants.

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15. Is the university requesting or intending to request permission for a new fee or to attach an existing fee to the program? *If yes, explain.*

X	
Yes	No

Explanation (if applicable):

The Ph.D. in Computer Science program will be supported from the same CSC and INFS program fees applied to existing programs.

16. New Course Approval: New courses required to implement the new graduate program may receive approval in conjunction with program approval or receive approval

Appendix A
Individual Student Outcomes and Program Courses

State-support: Change cell on page 1 to use the UG or GR net amount.

Off-Campus Tuition, HEFF & Net	FY20	HEFF & EUC	Net	
Undergraduate	$351.25	$49.39	**$301.86**	*Change cell on page 1*
Graduate	$465.80	$62.57	**$403.23**	*to point to your net*
Externally Supported	$40.00			

State-support: Change cell on page 1 to use the UG or GR net amount for your university.

On-Campus Tuition, HEFF & Net	FY20	HEFF	Net	
UG Resident - DSU, NSU, SDSU, USD	$251.35	$28.91	**$222.44**	*Change cell on page 1*
UG Resident - BHSU	$250.45	$28.80	**$221.65**	*to point to your net*
UG Resident - SDSMT	$246.00	$28.29	**$217.71**	
GR Resident - DSU,NSU,SDSU,USD	$329.95	$37.94	**$292.01**	*Change cell on page 1*
GR Resident - BHSU	$323.35	$37.19	**$286.16**	*to point to your net*

Resources Over (Under) Budget	**$545**	**$9,233**	**$32,004**	**$67,858**

Provide a summary of the program costs and resources in the new program proposal.

Estimated Salary & Benefits per FTE		Faculty	Other
Estimated salary (average) - explain below		$101,216	$0
University's variable benefits rate	(see below)	0.1438	0.1438
Variable benefits		$14,555	$0
Health insurance/FTE, FY18		$8,470	$8,470
Average S&B		$124,241	$8,470

Explain faculty used to develop the average salary & fiscal year salaries used. Enter amount above.

The FY19 salaries of 6 people in the Electrical Engineering and Computer Science department were averaged.

Explain adjunct faculty costs used in table:

0 courses per year to be taught by adjuncts at $0,000 per course.

Explain