Use this form to request authorization to plan a new baccalaureate major, associate degree program, or graduate program; formal approval or waiver of an Intent to Plan is required before a university may submit a related full proposal request for a new program. The Executive Director and/or their designees may request additional information. After the university President approves the Intent to Plan, submit a signed copy to the Executive Director through the System Academic Officer through the proper process. Only post the Intent to Plan to the university website for review by other universities after approval by the Executive Director, System Academic Officer or designee. This form is meant to capture critical elements for stakeholders to review prior to a full proposal.

University DSU - Dakota State University Degree BS : Bachelor of Science Name of Major X999 : New Major Requested Human-Computer Interaction

Note: If the new proposed program includes specific specializations within it, complete and submit a New Specialization Specialization Required? Form for each proposed specialization and attach it to this form. Since specializations appear on transcripts, they require Board approval. College/Department 8A : DSU College of Arts & Sciences/DSOS : Social Sciences

College/Department 8A : DSU College of Arts & Sciences/DSUS : Social Sciences **Intended Date of Full Proposal** Fall 2026 **Planned CIP Code** 303101

Program Description

1. Provide the working program description that may appear in the university catalog.

Human-Computer Interaction (HCI) is an interdisciplinary program designed to equip students with skills in technology, humanities, design, and research to create user-centered interfaces and experiences. The program emphasizes the integration of technical knowledge with an understanding of human behavior, preparing students for careers in user experience (UX) design, interface development, usability research, and emerging fields that rely on human-computer teaming and collaboration.

Strategic Impact

2. Describe how the program fits in with the institutional mission, strategic plan, existing institutional program array, and academic priorities.

The HCI program aligns closely with Dakota State University's mission to prepare students to be innovators and leaders in technology-driven fields. By integrating technical knowledge with human-centered design and research, the program directly supports the university's vision to lead in cybersecurity and technology-related fields.

The interdisciplinary nature of HCI fits well with DSU's strategic priorities, emphasizing innovative education, technology integration, and applied learning. The program enhances DSU's academic offerings by bridging the gap between technology and the humanities and social sciences, expanding the institutional ability to include cutting-edge skills in UX design, usability research, and interface development. This expansion supports DSU's goal to equip students for careers that shape the future of technology in a human-centric way, addressing a growing demand in the tech workforce.

If the program does not align to the strategic plan, provide a compelling rationale for the institution to offer the program.

3. How does the program connect to the Board of Regent's Strategic Plan?

The Human-Computer Interaction (HCI) program directly supports the priorities outlined in the South Dakota Board of Regents' Strategic Plan for 2022-2027 by advancing student success, workforce development, and innovation.

• Goal 2: Workforce Development

The HCI program prepares students for high-demand careers in UX design, usability research, and interface development, addressing workforce needs projected in South Dakota. These skills align with the Board's priority to cultivate a pipeline of talent for the state's growing technology and innovation sectors. Furthermore, the program enhances graduates' ability to contribute to economic development through applied learning and human-centered design.

• Goal 3: Student Success

By emphasizing interdisciplinary learning, technical expertise, and real-world applications, the program supports the Board's goal to increase student success and career readiness. Students will engage in hands-on projects, applied research, and innovative problem-solving, improving retention, graduation rates, and employability. The program integrates academic excellence with practical experiences to ensure students are well-prepared to meet the evolving demands of the modern workforce.

Goal 4: Innovation and Research

The HCI program fosters innovation by combining DSU's strengths in technology and cybersecurity with the creative and analytical approaches of the humanities. This interdisciplinary approach supports the Board's goal of expanding research and fostering innovation to drive economic growth in South Dakota. By bridging human-centered design with technical expertise, the program positions DSU as a leader in advancing cutting-edge academic offerings.

Through its interdisciplinary focus, the HCI program addresses statewide workforce needs while supporting the SDBOR's strategic objectives of workforce development, student-centered education, and innovation.

Program Summary

4. If a new degree is proposed, what is the rationale?

This question refers to the type of degree, not the program. For example, if your university has authorization to offer the Bachelor of Science and the program requested is a Bachelor of Science, then the request is not for a new degree.

5. What modality/modalities will be used to offer the new program?

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.

	Yes/No	Intended Start Date	
On Campus	Yes	Fall 2026	
	Yes/No	Location(s)	Intended Start Date
Off Campus Location	No		
	Yes/No	Delivery Method(s)	Intended Start Date
Distance Delivery	Yes		Fall 2026
		Yes/No	Identify Institutions
Does another BOR institution already have authorization to offer the program online?		No	

6. If the program will be offered through distance delivery, identify the planned instructional modality:

Asynchronous : Students are not required to attend the course at a specific time or location.

Academic Quality

7. What peer institutions and current national standards will be referenced to develop the curriculum for this program? Include links to at least 3 comparable programs at peer institutions and links to national or accreditation standards, if any.

The proposed HCI program aligns with national trends and leverages curriculum models from leading institutions to ensure academic rigor and relevance. Comparable programs include:

• Carnegie Mellon University, B.S. in Human-Computer Interaction – The Human-Computer Interaction Institute (HCII) at Carnegie Mellon offers one of the most recognized programs in HCI, blending technical, design, and behavioral science components. (https://hcii.cmu.edu/academics/hci-undergrad/bs-human-computer-interaction)

• New Jersey Institute of Technology – B.S. in Human-Computer Interaction -- This degree provides a comprehensive background in design activities, including eliciting client requirements, understanding human factors, and incorporating evaluation results into iterated designs. (https://catalog.njit.edu/undergraduate/computing-sciences/informatics/human-computer-interaction-bs/)

- University of Washington The Bachelor of Science in Human-Centered Design and Engineering prepares students for interdisciplinary work in UX, usability, and interaction design. (https://www.hcde.washington.edu/bs)
- Regionally, programs such as the University of Minnesota's Human Factors and Ergonomics track

(https://design.umn.edu/academics/programs/about-human-factors-ergonomics) and Iowa State University's HCI program (https://iowastateonline.iastate.edu/programs-and-courses/analytics/human-computer-interaction-master-of-computer-human-interaction/) demonstrate growing interest in this interdisciplinary field.

The HCI curriculum at Dakota State University will reflect standards from organizations such as:

- The Association for Computing Machinery (ACM) Provides guidelines for curricula in HCI and computing-related fields.
- UXPA International Sets professional standards for usability and user experience design.
- CHI (Special Interest Group on Computer-Human Interaction) Offers a research-based foundation for HCI best practices.

8. What program accreditation is available, if any?

Currently, no standalone accreditation exists specifically for HCI undergraduate programs. However, components of the curriculum align with established accreditation standards:

- ABET accreditation, which applies to computing-related programs, may be a consideration for technical aspects of the curriculum.
- National Association of Schools of Art and Design (NASAD) standards could apply to design-focused elements.

9. Will the proposed program pursue accreditation or certifications?

Yes

If no, why has the department elected not to pursue accreditation for the program?

The proposed HCI program will pursue accreditation where feasible and applicable to ensure credibility and competitiveness. Initial efforts will focus on aligning with:

Certifications such as Certified Usability Analyst (CUA) and Human Factors Practitioner (HFP) to provide students with industry-recognized credentials.

If accreditation or certification pathways are not pursued initially, the decision will be based on a cost-benefit analysis relative to program size and demand. Regular program reviews will ensure alignment with national standards and stakeholder expectations.

Duplication and Competition

10. Do any related programs exist at other public universities in South Dakota?

A list of existing programs is available through the university websites and the RIS Reporting: Academic Reports Database. If there are no related programs within the Regental system, indicate **none**.

None. Currently, no regental institution in South Dakota offers a dedicated degree program in Human-Computer Interaction (HCI). While related programs in computer science, design, and psychology may touch upon components of HCI, they do not provide the comprehensive, interdisciplinary approach to user experience (UX) design, usability research, and interface development that this program will deliver.

A. If yes, defend the need for an additional program within the state, Include IPEDS enrollment data and additional data as needed.

B. If yes, would this program be a candidate for Regental system collaboration?

11. Do any related programs exist at any non-Regental college or university within 150 miles of the university? *List those programs here:*

No non-Regental institutions within a 100-mile radius currently offer a specialized HCI program. However, institutions such as the University of Minnesota and Iowa State University offer programs that demonstrate regional demand for HCI-related education, as noted in the answer to question seven (7).

A. If yes, use IPEDS to identify the enrollment in those programs.

None

B. What evidence suggests there is unmet student demand for the proposed program, or that the proposed program would attract students away from the existing program?

The growing demand for UX designers, usability researchers, and interface developers highlights an opportunity for Dakota State University to establish itself as a leader in this emerging field within South Dakota. This program would address a clear gap in the state's higher education offerings, enabling students to pursue cutting-edge careers without needing to leave the state.

Market Demand

This section establishes the market demand for the proposed program (eg Regental system need, institutional need, workforce need). Use the following sources for your data:

- South Dakota Department of Labor & Regulation
- <u>O-Net</u>
- US Department of Labor Projections Central
- SDBOR Workforce and Degree Gap Analysis Report

12. What is the expected growth of the industry or occupation in South Dakota and nationally?

Include the number of openings, as well as the percentage of growth when possible.

The demand for professionals in Human-Computer Interaction (HCI) and related fields such as User Experience (UX) design, usability research, and interface development is growing both nationally and regionally. According to the U.S. Bureau of Labor Statistics (BLS), employment in roles such as web developers and digital interface designers is projected to grow by 23% from 2021 to 2031, much faster than the average for all occupations. This growth is fueled by the rapid adoption of technology across industries, increasing reliance on user-friendly interfaces, and the expansion of e-commerce, mobile applications, and immersive technologies such as augmented and virtual reality projections for South Dakota do not provide the same granularity, similar trends are observed. O*NET Online indicates that positions requiring HCI skills, including web developers and software developers, are among the fastest-growing in the region. For example, software development roles in South Dakota are expected to grow by 29.9% between 2020 and 2030, according to the South Dakota Department of Labor & Regulation.

13. What evidence, if any, suggests there are unfilled openings in South Dakota or nationally?

Nationally, the BLS reports that there were 197,100 job openings for web developers and digital interface designers in 2022, highlighting significant demand for these roles. In South Dakota, software development positions regularly appear on high-demand job lists, with employers citing challenges in finding qualified candidates to fill vacancies. Industry representatives from companies specializing in finance, such as Bancorp, and security and technology company Peraton, responded to a feedback request from the Director of our Career and Professional Development office, expressing an increasing need for HCI expertise in their sectors.

14. What salaries can program graduates expect to earn in South Dakota and nationally?

Annual salary for web developers and digital interface designers was \$81,320 in 2022, with top earners in the field making over \$150,000 per year. Regionally, software developers in South Dakota report median salaries of approximately \$89,000, reflecting competitive compensation that incentivizes students to pursue careers in this field. The relatively low cost of living in South Dakota further enhances the value of these salaries.

15. Optional: Provide any additional evidence of regional demand for the program.

e.g. prospective student interest survey data, letters of support from employers, community needs...

In workforce studies and research related to industry partners, recurring themes include the need for interdisciplinary training that combines technical skills with an understanding of human behavior and interaction. Industry experts from agra-marketing firm, Hurley and Associates, and talent acquisition corporations such as the Bancorp Group, provided feedback to our career services survey indicating that demand for graduates with undergraduate degrees in this area will be growing in the next 5-10 years.

Student Demand

16. Provide evidence of student completers/graduates at that degree level at peer institutions that offer the same/similar program using data obtained from IPEDS.

Choose programs not already listed in question 11. Use the most recent year available.

University Name	State	Program Name	Number of Degrees Conferred in Program	Total Number of Conferrals at Level (Undergrad or Grad)
DigiPen Institute of Technology	WA : Washington	Human Computer Interaction	40	1042
Savannah College of Art and Design	GA : Georgia	Human Computer Interaction	45	14657
Stony Brook University	NY : New York	Human Computer Interaction	71	17549

17. What evidence suggests there is interest from prospective students for this program at the university?

Projected Enrollment and Graduation Rates at DSU

Dakota State University's undergraduate enrollment of approximately 3,000 students positions it well within the range of these institutions. Using comparative graduation percentages:

• If DSU achieves a rate similar to Stony Brook (0.40% of undergraduates), this would equate to approximately:

• 12 HCI graduates annually, exceeding the Board of Regents' threshold of seven graduates per year.

Feasibility and Potential Impact

This analysis demonstrates that even modest enrollment in DSU's HCI program would make it feasible to meet or exceed the Board of Regents' requirements. Furthermore, the program's alignment with DSU's focus on interdisciplinary technology and the increasing demand for HCI skills nationally reinforces its potential to attract and retain students.

Supporting Data Source: IPEDS Database, 2022-2023 Academic Year.

Evidence from regional and national trends supports the strong interest in the proposed Human-Computer Interaction (HCI) program:

1. Regional Connections:

• Graduation data from Southeast Technical College (STC) and Lake Area Technical College (LATC) indicate that these institutions produce students in related fields, such as programming, computer networking, and graphic design, who may be interested in pursuing a more advanced interdisciplinary program like HCI at DSU. These students represent a potential pipeline for the program, particularly through articulation agreements.

2. Existing DSU Student Population:

• DSU students enrolled in fields such as computer science, digital arts and design, and communication studies have expressed interest in combining technical and creative skills, aligning well with the interdisciplinary focus of the HCI program.

3. Peer Institution Trends:

• Comparable programs at institutions like Iowa State University and University of Minnesota indicate growing enrollment in HCI-related fields, demonstrating national interest that DSU can leverage.

This evidence suggests a strong demand for the HCI program among both prospective and current students, particularly those seeking a program that blends technical expertise with user-focused design and research.

Enrollment

18. Are students enrolling in this program expected to be new to the university or redirected from existing programs at the university?

Include the number of openings, as well as the percentage of growth when possible.

The proposed Human-Computer Interaction (HCI) program is expected to attract both new students and those redirected from existing programs at DSU.

1. New Students:

The program is likely to draw new students from regional institutions such as Southeast Technical College (STC) and Lake Area Technical College (LATC). Both institutions graduate students in related fields such as computer networking, programming, and graphic design. Articulation agreements with these colleges could strengthen DSU's pipeline and create a seamless transition for students pursuing advanced education in HCI.
Additionally, prospective high school students with interests in technology, design, and user experience will see this program as a distinctive offering not widely available at other institutions in South Dakota.

2. Redirected Students:

• Current DSU students in fields such as computer science, digital arts and design, and communication studies may be redirected to the HCI program. These students often seek interdisciplinary programs that blend technical and creative skills, and the HCI program would provide an attractive option for those exploring new areas of study or seeking more specialized career pathways.

19. Narrative Description of the preliminary estimates on annual enrollment in this program by year six

Include all students within the program, not just those new to the program.

Growth Projections:

• The program is anticipated to begin with 5-10 students in its inaugural year, with an annual growth rate of approximately 10-15%, based on comparable enrollment trends observed in similar programs at peer institutions.

19. Narrative Description of the preliminary estimates on annual enrollment in this program by year six

Include all students within the program, not just those new to the program.

The Human-Computer Interaction (HCI) program is projected to reach full enrollment by its sixth year, with an estimated total of 40-80 students across all years of the program.

• Year 1: The program is expected to start with 5-10 students, comprising new entrants from regional schools (e.g., STC and LATC) and redirected DSU students with interests in design, digital media, or computing.

• Years 2-5: As articulation agreements and marketing efforts mature, enrollment is anticipated to grow steadily, with an annual increase of 10-15%, driven by internal transfers and increased regional awareness of HCI career pathways.

• Year 6: By this stage, the program is expected to stabilize at 40-80 total students across all years. This projection aligns with enrollment trends from similar programs at Tufts University, where the undergraduate interdisciplinary HCI undergraduate certificate accounts for approximately 0.76% of the number of degrees awarded at the bachelor level (52 students out of 6,877, according to IPEDS 2022–2023). A comparable proportion at DSU would translate to an enrollment range within the proposed target.

Based on the anticipated growth rates and starting enrollment, the proposed degree program would exceed the SDBOR productivity requirements. Specifically:

- The program would achieve over 35 graduates in 5 years, regardless of the starting enrollment (5–10 students) or growth rate (10–15%).
- It also meets the annual requirement of 7 graduates per year on average.

The interdisciplinary nature of the program, coupled with DSU's strong reputation in technology, positions it as an appealing choice for students seeking careers in user experience design, usability research, and interface development. Partner institutions such as STC and LATC may provide a flow of interested students, while DSU's existing student population offers opportunities for redirection into the HCI program.