SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS

Institutional Program Review
Report to the Board of Regents

Use this form to submit a program review report to the system Chief Academic Officer. Complete this form for all units/programs undergoing an accreditation review, nationally recognized review process, or institutional program review. The report is due 30 days following receipt of the external and internal review reports.

UNIVERSITY:	DSU
DEPARTMENT OR SCHOOL:	**College of Business and Information Systems**
PROGRAM REVIEWED:	**MS in Analytics**
DATE OF REVIEW:	**4/1/2022**
TYPE OF REVIEW:	Institutional Program Review

University Approval

To the Board of Regents and the Executive Director: I certify that I have read this report, that I believe it to be accurate, and that it has been evaluated and approved as provided by university policy.

José-Marie Griffites	8/19/2022
President of the University	Date

1. **Identify the program reviewers and any external accrediting body:**
   Dr. Rajeev Bukralia, Associate Professor & Program Director for MS in Data Science
   Minnesota State University, Mankato

2. **Items A & B should address the following issues: mission centrality, program quality, cost, program productivity, plans for the future, and assessment of progress.**

   2(A). **Describe the strengths and weaknesses identified by the reviewers**
   Strengths: According to the reviewer, the MSA program is a successful graduate program that aligns well with DSU's mission, vision, and values. It is a program that is critical to meeting the industry needs of analytics and data science related jobs that are growing at a rapid pace. The MSA program has shown a trajectory for growth and has enrollment comparable to data science and analytics programs offered at institutions of a similar size in the Midwest. More specifically, the reviewer listed the following strengths of the MSA program including:
   - Student-focused program faculty who have an expertise in analytics and related fields. Faculty are engaged with students inside and outside of the classroom
   - Flexible mode of delivery catering to both on-campus and distance students
   - Curriculum with five elective tracks that allows students to pursue a track of their choice
   - The program is available as a Fast-Track (4+1) option to undergraduate CIS students
   - Availability of resources and technology infrastructure for instruction and research
   - Initiatives such as MadLabs, Applied Research Lab, and CBAR add value to the program
   - Collaborations with other colleges on campus, SDSU, and local industry

- 100% placement; graduates placed at leading companies in analytics related roles
- Program covers cutting-edge technologies

Weakness: The weaknesses identified by the reviewer include:
- Program curriculum lacks ethics courses
- More student club activities and more graduate assistantship opportunities are needed for MSA students
- Faculty attrition
- Since the MSA program has a greater number of distance students, the graduation rate of 53% is explainable. Yet, it would be essential to develop strategies to improve the graduation rate.

2(B). Briefly summarize the review recommendations
- Consider hosting data analytics competitions and student-focused conferences for students that may create recruiting opportunities for the MSA program.
- Explore the possibility of developing courses or a specialization in Fintech to deepen the partnership with the banking and credit card industry in the state.
- Incorporate ethics, especially as it relates to emerging technologies such as artificial intelligence (AI) and DevOps (MLOps) in relevant courses.
- Establish a process for internal and periodic assessment that is in congruence with the new policies established by the SDBOR for academic program evaluation in collaboration with the Department of Institutional Effectiveness
- Deepen collaboration with the BIS and Beacom College faculty on emerging technologies such as artificial intelligence, blockchain, and application of analytics solutions in cybersecurity.
- Engage MSA faculty and students with the Applied Research Lab in Sioux Falls on projects that intersect cybersecurity and analytics.

2(C). Indicate the present and continuous actions to be taken by the college or department to address the issues raised by the review. What outcomes are anticipated as a result of these actions?
- We are collaborating with CAPITAL Services in Sioux Falls to develop a data analytics competition. We plan to host the first competition during the DSU Research Week in Spring 2023. CAPITAL Services will sponsor the competition and provide datasets for the competition. We intend to make the competition an annual event that helps engage our on-campus and online students and provides recruiting opportunities for the MSA program.

- We are collaborating with the Office of Institutional Effectiveness to further formalize the process for internal assessment. We will apply the updated assessment procedures for continuous quality improvement in the next review cycle.

- Given the rapid changes in the discipline, the program will continue to assess its curriculum with respect to the relevance of the existing courses and opportunities for new ones. We expect to develop new analytics courses and/or new tracks/specializations in the next review cycle. We are exploring the possibility of adding new courses such as ethics and new specializations/tracks such as AI and Fintech. We will deepen collaboration with the BIS and Beacom College faculty to develop new courses related to emerging technologies such as AI, blockchain, and analytics solutions in cybersecurity.

- On the research side, we have been developing MSA students with real-world analytics projects, to solve real-world problems. Currently, this effort is actively made by MSA faculty members under Dakota State University's Center for Business Analytics Research (CBAR). In the next review cycle, we will collaborate with CBAR on student research. We will use CBAR as a platform to engage MSA faculty and students with the Applied Research Lab in

Sioux Falls on projects that intersect cybersecurity and analytics. We expect that through collaboration with CBAR, we will find grant opportunities for MSA faculty and research and graduate assistantship opportunities for MSA students.

3. **Starting in Fall 2019 reporting year, campuses will identify the undergraduate cross-curricular skill requirements as part of programmatic student learning outcomes and identify assessment methods for cross-curricular skill requirements as outlined in Board Policy 2:11. Program review completed prior to Fall 2019 need not include cross curricular skills.**

NA