DAKOTA STATE UNIVERSITY

COLLEGE OF BUSINESS AND INFORMATION SYSTEMS

INFORMATION SYSTEMS PROGRAMS AT DSU
(B.S. IS, MSIS, & D.Sc. IS)

SELF-STUDY DOCUMENT

SPRING 2013

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PART 1: INSTITUTIONAL HISTORY

Heritage: 1881-1982

Dakota State University was established in 1881 as the first teacher education institution in Dakota Territory. Teacher education remained the primary mission of the institution through the 1950s. However, in response to the changing needs of South Dakota in the 1960s, the university began to expand its role to include degree programs in the liberal arts and business.

In 1980, South Dakota welcomed a major new industry into the state: the banking and credit card industry. The success and growth of this new industry, as well as the success of other information-oriented, computer-based industries in the state, prompted the state's leadership to carefully examine the degree programs being offered at the public institutions of higher education within the state. After lengthy discussions, leaders in state government, the banking and information services industries, and the Board of Regents agreed to develop new degree programs at one institution and then to use the experience and knowledge from this development to expand programs throughout the state's public higher education system.

Mission Change: 1983-84

In 1984, the Legislature of the State of South Dakota (South Dakota Codified Law 13-59-2.2) assigned Dakota State University the role and mission of developing technology-based degree programs in information systems, business, teacher education, and allied health care services at both the undergraduate and graduate levels.

The Legislature provided $2.6 million in additional operating funds to support a three-year mission change at DSU. During the initial phase of the transition, the academic programs of the institution were reviewed. Degree programs were phased out if they were duplicated at the other five regental institutions or if graduates would enter an over-supplied marketplace. New information systems programs, computer equipment, and facilities were approved for DSU. During the transition, special attention was given to ensure that all students in programs slated for phase-out received a full opportunity to complete those programs. To ensure the continuation of education quality, when the number of students continuing in a program became very small, a special faculty-mentoring program was developed.

The second phase of the transition began in August 1984, with the development of degree programs that integrated computers and information technologies into traditional academic subjects and added coursework specific to the computer and information systems areas. Existing faculty were retrained, and new faculty were hired. Programs to implement the research and service aspects of the new role and mission were started. This was a period of stress for the campus, but it was also a period of great exhilaration with faculty and staff invigorated and renewed by the need for innovation, adaptation, and change. Some faculty and staff were unable to adapt to the changing conditions and left the university, but those who stayed on for the ride were justly proud of their accomplishments.

Realizing that the innovative programs being developed at DSU were expensive, private industry and state government provided the university with additional financial resources. Consultants from state agencies and from national corporations also provided assistance and guidance that contributed greatly to the success of the mission change.

Since the Mission Change: 1984-present

Today, the institution remains focused on the mission adopted in 1984. The curriculum in established degree programs is carefully scrutinized each year to ensure that it remains on the cutting edge relative to technology. When new degree programs are proposed by the colleges, they must clearly satisfy the "Is it compatible with our mission?" question before any additional planning is done.

Improvements in equipment and facilities continue to be a high priority in the institution's agenda. The institution initially provided training in both mainframe and desktop computing. In recent years, the emphasis switched first to desktop computing and more recently to encompass wireless, mobile, and tablet computing. With the addition of degree programs that emphasize information assurance and security issues, additional computer lab facilities have been added to the campus infrastructure.

Prior to the mission change, most DSU students lived within a 50-mile radius of the campus. Most were traditional students coming to the institution directly from high school. Since the mission change, the DSU audience and student population has changed markedly. Immediately after the mission change, enrollments plunged from 1,246 to 867 in two years – a frightening 27.6 percent decline the first year, followed by another 12.6 percent decline the second year. But the new curriculum changes, combined with new institutional vigor, provided the institution with unprecedented enrollment growth and stability. Since that rather rocky start, the institution's enrollments have climbed, reaching 3,110 in Fall 2012 (1,727.7 FTE).

In 1999, the Higher Learning Commission of the North Central Association of Colleges and Schools (NCA) approved DSU's request to add its first graduate program, a Master of Science in Information Systems, to the curriculum. In 2000, a Master of Science in Education degree program in Computer Education and Technology was also approved by the Higher Learning Commission. The program name for the Master of Science in Education degree program has since been changed to Educational Technology. In 2004, the Master of Science in Information Assurance was approved. In December 2005, the South Dakota Board of Regents authorized DSU to offer its first doctoral degree. The Master of Science in Health Informatics was approved in 2009 with the Master of Business Administration program getting approval in 2011. Of the 3,110 students enrolled at DSU in Fall 2012, some 2,872 students were enrolled at the undergraduate level; another 238 students were enrolled at the graduate level. This number reflects both degree-seeking students and special (non-degree seeking) students.

Throughout its 131 years, Dakota State University has had a proud heritage of preparing graduates to meet the needs of a changing society. Since 1881, the university has provided challenging academic programs in one of the best educational environments in the state. The continuation of this tradition of service is of prime importance to the faculty, students, staff, and administration of Dakota State University.

Accreditation History

Dakota State University was granted accreditation by the Higher Learning Commission for a period of ten years in 1961 and accreditation has been continued after each comprehensive visit. Since being accepted into the Higher Learning Commission's (HLC) Academic Quality Improvement Program (AQIP) in February 2005, DSU has participated in two strategy forums (November 2005 and February 2010), a systems appraisal in 2008-09 and a Quality Check-Up Visit in October 2010. On February 20, 2011, the HLC's Institutional Actions Council (IAC) voted to continue the accreditation of Dakota State University through the AQIP process with the next reaffirmation in 2018-19.

In October 2012, DSU submitted a request to the Higher Learning Commission to request that the stipulation which requires prior approval by HLC for graduate-level degree programs be revised so that the university can add to its graduate offerings in information technology, health sciences and education without seeking HLC approval for each individual degree program in these areas. Associated with this request, DSU also requested approval to offer a new master's degree, an MS in Applied Computer Science and that the stipulation which limits off-campus offerings to University Center-Sioux Falls, SD be expanded so that DSU can also offer selected majors at the other off-campus locations managed by the South Dakota Board of Regents, which include University Center – Rapid City and Capital University Center - Pierre. HLC commissioned a review team to conduct a site visit (November 5-6, 2012) as part of a comprehensive effort to evaluate DSU's request. On February 26, 2013, HLC's IAC concurred with the evaluation findings and approved the institution's request to change its stipulations. The new stipulation will read as follows:

> *"No prior approval for master's degree programs. Doctoral programs are limited to the Doctor of Science in Information Systems. Off campus face-to-face offerings are limited to Associate, Bachelor, Master's, and Certificate programs at University Center - Sioux Falls, SD, University Center-Rapid City, SD, and Capital University Center-Pierre, SD."*

About DSU's Information Systems programs

The Bachelor of Science Degree Program in Information Systems (IS)

In 1984, the South Dakota Legislature and the South Dakota Board of Regents established Dakota State University as the institution specializing in programs in computer management, computer information systems, and other related undergraduate and graduate programs. In response, DSU developed leading-edge computer/information systems degree programs.

The first program created to address the new mission was the Computer Information Systems degree. The curriculum was developed through a close partnership with Citibank; this relationship has shaped the program for the 20 years that followed. The program has maintained a mainframe flavor, which is attractive to a number of our valued employers. During this same period, the Computer Science program has evolved to complement the CIS program. Having both programs in the College of Business and Information Systems provides students with many unique opportunities.

In the years since 1999, the programs have gone through several changes. The Computer Science program has taken on its own identity by removing core requirements for many of the CIS classes. The CIS degree has been evolving to address new trends such as electronic commerce and computer security.

In 2005, the IS program underwent a program review. The recommendations of the reviewer, industry changes and faculty input have inspired changes to improve the program and address reviewer comments. The undergraduate program originally named Computer Information Systems went through a significant curricular change during the 2009-2010 school year. Faculty proposed major modifications to the degree in response to shrinking student enrollment and the fact that the curriculum had not been modified for several years. Also, the ACM and AIS unveiled major revisions to the Information Systems model curriculum. The changes were approved at the college level, at the university level and by the South Dakota Board of Regents. The revised Bachelor's degree was included in the 2010-2011 catalog.

The specializations included in the redesigned degree are: Business Analysis, Change Management, Infrastructure Analysis, Software Development and Web Development. There is a strong commitment to update and review the curriculum as necessary. Current efforts will merge the Infrastructure Analysis specialization into the NSA program and investigate opportunities for programming languages, analysis and design and project management enhancements. The institution realizes the necessity of change in order to provide students with the highest quality of education.

The Master of Science Degree Program in Information Systems (MSIS)

The MSIS degree program was the first graduate program at DSU. Approved in 1999 by the Higher Learning Commission, the program was designed to combine both theoretical knowledge and practical applications to meet the real needs in the state and region in a world that is shaped by continuously and rapidly changing technology.

Prior to its inception, the original master's proposal underwent a rigorous, external review by consultant Dr. John Gorgone. Perhaps the most significant of his findings suggested the reorganization of the course curriculum to align with then newly emerging national standards (MSIS 2000). This change resulted in a revised curriculum that recognized the varying educational and professional backgrounds of possible students. This concept has allowed the entry of students with differing backgrounds and has offered students several areas to focus on. The prerequisite "foundation" offerings are waived for students with appropriate professional backgrounds. In 2005, the MSIS program underwent a program review and has since then continued to make improvements to the program.

The Doctor of Science Degree Program in Information Systems (D.Sc.)

The D.Sc. in information systems program is DSU's first doctoral degree. In December 2005, the South Dakota Board of Regents authorized DSU to offer its first doctoral degree. In the Fall of 2006 DSU admitted its first class of doctoral students.

As a discipline, Information Systems focuses on theory and practices related to gathering, manipulating, and classifying, storing, retrieving and analyzing recorded data. In business and industry, information systems are used to improve the efficiency and effectiveness of

the organization and its strategic decisions. As a discipline, Information Systems is relatively new – perhaps only four decades old. Growth and interest in information systems theory and practice is directly linked to the growth in and proliferation of computing capabilities in business and industry.

The D.Sc. program in Information Systems emphasizes applied scholarship, focusing on multi-disciplinary research projects with a strong emphasis on the productive application of information systems and information technology to organizations and their management.

PART 2: TRENDS IN THE DISCIPLINE

National and Regional Trends

Despite the setback in the stock market and the IT sector, employment in the information super-sector is expected to experience rapid growth during 2010-20 period. According to the Occupational Outlook Handbook published by the U.S. Department of Labor:

> *"Computer and information technology occupations are projected to grow by 22 percent, adding 758,800 new jobs from 2010 to 2020. Demand for workers in these occupations will be driven by the continuing need for businesses, government agencies, and other organizations to adopt and utilize the latest technologies. Workers in these occupations will be needed to develop software, increase cybersecurity, and update existing network infrastructure.*
>
> *Employment in computer systems design and related services is expected to increase by 47 percent, driven by growing demand for sophisticated computer network and mobile technologies."*[1]

Moreover, at the national level, several developments and trends are shaping the occupational outlook for the information technology (IT) workforce. These developments range from internationally driven such as the political climate and heightened security concerns, industry specific such as the healthcare industry, government related, such as new laws and regulations (Sarbanes and Oxley Act), and corporate driven such as big data analytics. The following paragraphs present a brief discussion of each of these trends.

The national and international heightened concern about terrorism and the potential economic damage resulting from terrorist acts is fueling the demand for IT security professionals. Following are excerpts from the Homeland Security Advisory Council's Fall 2012 CyberSkills Task Force Report that indicate the extent of the problem and the need for a trained workforce in this area:

> *"The cyber threat facing the nation has escalated sharply in recent years and come into clear focus. In April 2009, the Wall Street Journal ran a front page article entitled Electricity Grid in U.S. Penetrated by Spies, and CNN showed proof that a cyber-attack can cause a power generator to break apart.*

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[1] http://www.bls.gov/ooh/About/Projections-Overview.htm

> *In the face of such burgeoning threats, DHS has determined to move immediately to the next level of capability, one built upon the very advanced technical skills necessary to not only respond to but get ahead of this new attack tempo.*
>
> *Finding the people with the needed skills, however, poses a dilemma. The numbers of professionals with these mission Practical skills are so limited that government contractors and federal agencies compete with one another and the private sector to hire them."[2]*

Moreover, with the proliferation of the Internet and online transactions, privacy and security concerns pose significant challenges to the government and industry alike to provide enhanced computer security and information assurance measures.

As noted by Wilson and Lankton (2004), the healthcare industry accounted for 14% of the U.S. GDP ($1.31 trillion) and is projected to rise to $2.6 trillion. Moreover, the industry is experiencing significant changes with the introduction of the Health Insurance Portability and Accountability Act of 1996 (HIPAA), mergers and acquisition, proliferation of online healthcare information (e-health), and increasing demand for technology support such as electronic access to health records, and appointment scheduling. Such changes are fueling the demand for (IT) professionals to support the demands of this industry.

According to a report on Healthcare Informatics from the Jobs For the Future (JFF):

> *"As measured by online job postings, hiring demand across the economy experienced a modest recovery in 2011, with total job listings up 6 percent in 2011 from 2007 levels. Total hiring demand for health care occupations was somewhat stronger, up 9 percent from 2007 to 2011, although postings stayed flat for registered nurses (RNs), the largest health care occupation. In contrast, postings for health care informatics jobs took off, jumping 36 percent in that four-year period.*
>
> *Health care informatics jobs now constitute the eighth largest share of health care occupation postings. And that share is likely to continue to grow, given the trends and pressures shaping the health care industry."[3]*

Government regulations such as the Sarbanes and Oxley Act are also putting demands on the IT workforce. As companies move towards compliance with such regulations, significant changes in business processes and supporting information systems are required. Knowledge and experience with such regulations is certainly an advantage for IT professionals.

Last but not least is the phenomenon of "big data and analytics". "Big data" refers to the large amounts of data and information being generated and captured by almost every industry in the economy and the potential to harness this data for improved productivity and growth through the use of analytics. According to a recent report by the McKinsey Global Institute

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[2] https://www.dhs.gov/sites/default/files/publications/HSAC%20CyberSkills%20Report%20-%20Final.pdf

[3] http://www.jff.org/sites/default/files/CTW_burning_glass_publication_052912.pdf

"Leaders in every sector will have to grapple with the implications of big data, not just a few data-oriented managers. The increasing volume and detail of information captured by enterprises, the rise of multimedia, social media, and the Internet of Things will fuel exponential growth in data for the foreseeable future.

There will be a shortage of talent necessary for organizations to take advantage of big data. By 2018, the United States alone could face a shortage of 140,000 to 190,000 people with deep analytical skills as well as 1.5 million managers and analysts with the know-how to use the analysis of big data to make effective decisions."[4]

From a regional perspective, South Dakota offers an attractive environment for technology related industry. Specifically, South Dakota's lower than average cost of living, lower than average cost of doing business, established information technology infrastructure, central location, attractive amenities, and overall excellent quality of life makes South Dakota particularly attractive to businesses and employees. Moreover, the SD Opportunities report emphasizes engaging students in more research and development activities to enhance South Dakota's long-term economy.

Curriculum Implications

The BS in Information Systems provided with students with a solid understanding of the core information systems topics and then provides an opportunity to gain in-depth knowledge in a specialization area. In the core, students will gain knowledge in the areas of programming, systems analysis, project management, networking, statistics, and database management. The specialization includes Business Analysis, Change Management, Software Development, and Web Development. To address current changes and demands, the BS in IS major is incorporating new classes in agile systems analysis and design and project management. In addition, to address the current regional and national trends, DSU's BS in IS program is incorporating mobile application development and alternate web development environments. Throughout, the goal is to balance the acquisition of hands-on skills with the higher-level understanding to prepare graduates for leadership positions.

The MSIS program's emphasis on big data and analytics (Data Management Specialization), software design and development (Application Development), cyber-security (Network Administration & Security), and healthcare informatics (Healthcare Information Systems) is concurrent with the aforementioned national trends. Moreover, to address the increasing demand for computer and networking, the networking specialization has been modified to emphasize network security (Network administration and security specialization). Further in-depth treatment of the information assurance and computer security is provided through the Master of Science program in Information Assurance and Computer Security (MSIA), established in 2004.

Recognizing the unprecedented demands for IT professionals in healthcare at the national and regional levels, the Graduate Council approved the MSIS program specialization in

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[4] http://www.mckinsey.com/insights/mgi/research/technology_and_innovation/big_data_the_next_frontier_for_innovation

Health Information Systems in 2005. The proposed specialization was designed to meet the needs of IT professionals in the health care industry. The MSIS program also prepares students to handle industry trends such as offshore outsourcing and regulations. Specifically, the core courses include a project management course and a strategy and policy course. The latter is particularly relevant for addressing the implications of regulations such as the Sarbanes Oxley Act and outsourcing initiatives. Last but not least, The MSIS program committee has also incorporated the more recent MSIS 2006 curriculum guideline suggestions in its curriculum.

The doctoral program also includes specializations in Decision Support, Data and Knowledge Management, Healthcare Information Systems, and Information Assurance and Security that are designed in line with underlying trends in big data analytics, healthcare informatics and cybersecurity. In addition, the doctoral program includes special topic courses designed to provide students with exposure to latest developments in the field.

PART 3: ACADEMIC PROGRAMS AND CURRICULUM

B.S. in IS Academic Program and Curriculum

Mission

The mission of the College of Business and Information System is to educate and prepare students to be life-long learners and professionals in business, information systems, computer science, business and computer education, and health information management. Inherent in the educational process is challenging individuals to develop information management skills, to think logically, and to make sound decisions. Information technology is integrated throughout the curriculum. This emphasis on information technology and faculty expertise provides the foundation for Dakota State University's Center of Excellence.

Graduates of the program will be knowledgeable in the use of technology as a problem-solving tool and will be prepared for entry-level positions in business, government, etc. Potential positions include (but are not limited to) business analyst, change analyst, infrastructure analyst, software development, web development, and database administration.

Objectives

Information Systems graduates will:

1) Be prepared for entry-level positions in business, government, etc.
   a) Students will be well-prepared academically for their first position in the career field.
   b) Graduates will find ready employment in the field.
2) Be knowledgeable and competent users of computer technology.
   a) Graduates will be competent and knowledgeable users of applications software programs.
   b) Graduates will be competent and knowledgeable computer programmers.

Program Description and Requirements

Graduates with a Bachelor of Science in Information Systems have a strong background in computing and business. Each graduate has an understanding of operating systems, data base applications programming, and on-line applications. Students are given significant experience in case studies of real-world information-systems application development. All students earning a Bachelor of Science in Information Systems degree must complete the following requirements in **Table 1** below.

Table 1. A list of courses in the B.S. in IS program

System-wide General Education Requirement			30 Cr. Hrs.
Majors must take ECON 201, as part of the System-wide General Education Requirements.			
Institutional Graduation Requirement			**11 Cr. Hrs.**
Majors must take CIS 130 as part of the Institutional Graduation Requirements.			
Required Courses			**33 Cr. Hrs.**
Course Prefix	**Course #**	**Course Title**	**Cr. Hrs.**
BADM	220	Business Statistics	3
BADM	360	Organization and Management	3
BADM	370	Marketing	3
CIS	251	Business Applications Programming	3
CIS	332	Structured Systems Analysis and Design	3
CIS	338	Project Management	3
CIS	350	Computer Hardware, Data Communications and Networking	3
CIS	361	Advanced Programming for Business Applications	3
CIS	427	Information Systems Planning and Management	3
CIS	484	Database Management Systems	3
AND			
CIS 494	494	Internship 1-8 credits (3 credits required)	3
OR			
CIS	498	Undergraduate Research/Scholarship 1-6 credits (3 credits required)	3
Choose one specialization			**27 Cr. Hrs.**
Business Analysis			
ACCT	210	Principles of Accounting I	3
ACCT	211	Principles of Accounting II	3
BADM	310	Business Finance	3
BADM	321	Business Statistics II	3
BADM	344	Managerial Communications	3
BADM	350	Legal Environment of Business	3
BADM	435	Management Technology and Innovation	3
CIS	424	Internet and Electronic Commerce	3
ECON	202	Principles of Macroeconomics	3

Change Management			
BADM	344	Managerial Communications	3
BADM	435	Management Technology and Innovation	3
BADM	457	Business Ethics	3
BADM	460	Human Resource Management	3
CIS	245	Information Security Fundamentals	3
CIS	325	Management Information Systems	3
CIS	384	Decision Support Systems	3
ECON	202	Principles of Macroeconomics	3
SOC	285	Society and Technology	3
Infrastructure Analysis			
BADM	344	Managerial Communications	3
CIS	245	Information Security Fundamentals	3
CIS	328	Operating Environments	3
CIS	383	Networking I	3
CIS	384	Decision Support Systems	3
CIS	385	Networking II	3
CIS	460	Windows Administration	3
CIS	462	UNIX/Linux Administration	3
ECON	202	Principles of Macroeconomics	3
Software Development			
BADM	344	Managerial Communications	3
CIS	275	Web Application Programming I	3
CIS	277	OS Interfaces and Utilities	3
CIS	330	COBOL I	3
CIS	331	COBOL II	3
CIS	375	Web Application Programming II	3
CIS	424	Internet and Electronic Commerce	3
CIS	487	Database Programming	3
MATH	201	Introduction to Discrete Mathematics	3
Web Development			
BADM	344	Managerial Communications	3
CIS	275	Web Application Programming I	3
CIS	328	Operating Environments	3
CIS	375	Web Application Programming II	3
CIS	383	Networking I	3
CIS	385	Networking II	3
CIS	424	Internet and Electronic Commerce	3
CIS	487	Database Programming	3
MATH	201	Introduction to Discrete Mathematics	3
Electives			**19 Cr. Hrs.**
Total			**120 Cr. Hrs.**

Program Delivery

Courses in the Information Systems degree are offered on campus in Madison, SD, at the University Center in Sioux Falls, SD and online through distance education.

Courses in the IS programs are offered using a variety of instructional delivery methods:

- Face to face on site in Madison, SD in a traditional classroom setting.
- Face to Face at University Center in Sioux Falls, SD in a traditional classroom setting.
- At a distance via Internet, using a combination of both live and/or encoded streaming videos of classes, interactive course web boards, course web sites and email.

Curriculum Management

The curriculum is overseen by working groups made up of faculty that teach in the program. Curriculum modifications initiated at this level are then brought to the college faculty as a whole for approval. They are then forwarded to the university curriculum committee and are acted on under the university polices. Proposed modifications and other curriculum issues are discussed such as changing trends in industry. The working groups have aligned the curriculum closely to the current national curriculum standards and industry trends, particularly the most recent ACM/AIS 2010 curriculum guidelines and have then reduced the number of credits from 128 to 120 credit hours to meet the South Dakota Board of Regents requirements.

IS Program Accreditation Review (results of last IS visit)

In 2005, the IS program underwent a program review. The recommendations of the reviewer, industry changes and faculty input have inspired changes to improve the program and address reviewer comments. The undergraduate program originally named Computer Information Systems went through a significant curricular change during the 2009-2010 school year. Faculty proposed major modifications to the degree in response to shrinking student enrollment and the fact that the curriculum had not been modified for several years. Also, the ACM and AIS unveiled major revisions to the Information Systems model curriculum. The changes were approved at the college level, at the university level and by the Board of Regents.

The specializations included in the redesigned degree are: Business Analysis, Change Management, Infrastructure Analysis, Software Development and Web Development. There is a strong commitment to update and review the curriculum as necessary. Current efforts will merge the Infrastructure Analysis specialization into the Network and Security Administration (NSA) program and investigate opportunities for programming languages, systems analysis and design and project management enhancements. The institution realizes the necessity of change in order to provide students with the highest quality of education.

Subsequent to the 2005 review, several of the faculty who teach in the program did complete terminal degrees. In addition, new terminally-qualified members have been hired to bring additional expertise in Information Systems and information assurance to the programs. Faculty have greatly increased their research activities as a result of the support provided by both the university and South Dakota Board of Regents (SDBOR).

MSIS Academic Program and Curriculum

Mission

The Masters of Science in Information Systems (MSIS) program at DSU prepares students to provide leadership in the information system field by providing high-quality state-of the-art education experience.

Objectives

The MSIS program at DSU will accommodate a wide diversity of student backgrounds and learning environments. Specifically, the program is appropriate for:

1. New graduates with degrees in a variety of fields from business students with an IS concentration, computer science, general business degrees, and bachelor degrees in a range of fields including the humanities, social science, engineering, and physical science.
2. New graduates with a BS degree in IS.
3. Experienced information systems professionals seeking to upgrade skills and to understand management issues.
4. Professionals from many fields seeking a change in careers.
5. International students.

The MSIS program will meet the needs of those individuals who are seeking to enhance their computer-specific knowledge by learning advanced technical and managerial concepts to facilitate professional enhancement. It will also meet the needs of those individuals who seek professional cross training in order to take advantage of new opportunities in the growing computer information systems field. Students graduating from the program will have the following skills, knowledge, and values:

1. A core of IS knowledge
2. Integration of IS and business foundations
3. Broad business and real world perspective
4. Communication, interpersonal, and team skills
5. Analytical and critical thinking skills
6. Specific skills leading to a career in IS

Specifically, the MSIS will prepare individuals who will:

1. Translate user requirements into effective computer-based systems and networks;
2. Effectively manage existing information systems projects;
3. Demonstrate knowledge of information systems, telecommunication protocols, and computer network theory, hardware and practice;
4. Understand and apply current and emerging computer software technologies including CASE (Computer-Aided Software Engineering), DSS (Decision Support Systems), database management, electronic commerce, Internet applications and network operating environments;
5. Implement managerial techniques to measure and improve information systems efficiency and effectiveness; and
6. Provide leadership in the organizational efforts to adopt new technologies.

Program Description and Requirements

The program requires 30 hours beyond the baccalaureate. All students must take the following:

1. Six core courses - (18 credit hours), including a capstone policy & strategy course;
2. An information integration project or a coursework only option, both equivalent to 3 credit hours;
3. A three-course sequence (9 credit hours) in a Career Track specialization. Specializations include Data Management, Application Development, Network Administration & Security, and Healthcare Information Systems. Students may also opt for a General Specialization which entails taking the first course from the Data Management, Application Development, and the Network Administration and Security specializations.

Students who do not meet the business and information systems knowledge requirements as specified for admission may have to take up to 9 additional hours of coursework added to their program of study. **Table 2** lists the courses in the MSIS program while **Appendix A** contains the course descriptions.

Given the current enrollment and to ensure students complete their program in a timely manner, all core courses are offered twice a year while specialization courses are offered once a year. In effect, a student with the appropriate background (i.e., does not need to take knowledge courses) and taking a full load of courses (3 per semester) can finish the program in 1.5 – 2 years. **Appendix B** contains the course rotation, while **Appendix C** includes a sample plan of study for a student entering in the fall semester.

Program Delivery

Courses in the MSIS program are offered using a variety of instructional delivery methods:

- Face-to-face on site in Madison, SD in a traditional classroom setting;
- Using interactive video-conferencing via the Dakota Digital Network offered at multiple sites in South Dakota (sites arranged to meet student need);
- At a distance via Internet, using a combination of both live and/or encoded streaming videos of classes, interactive course web boards, course web sites, and e-mail.

All courses are web-enhanced. In addition, certain courses may require class presentations. These may be made on campus or from a distance using a live audio-video connection.

Table 2. A list of courses in the MSIS program

Course Prefix	Course #	Course Title	Cr.Hrs.
Knowledge Courses			**3-9**
INFS	601	Information Systems	3
INFS	605	Foundations of Programming	3
INFS	612	Management & Evaluation of IS	3

Core Courses				18
INFS	720		Systems Analysis and Design	3
INFS	724		Project & Change Management	3
INFS	730		Web Application Development	3
INFS	750		IT Infrastructure, Technology, and Network Mgmt	3
INFS	760		Enterprise Modeling, and Data Management	3
INFS	780		IT Strategy and Policy	3
Project Option				**3**
INFS	788		Project Planning	1
INFS	788		Project Implementation	2
INFS	788		Project Continuation (if needed)	1
Additional 3 cr. Course Option				**3**
See MSIS/MSIA Course Summary/Rotation for listings of the 700 level graduate classes.				
Specialization Courses (choose one)				**9**
Application Development				**9**
INFS	732		Emerging Technologies & Issues	3
INFS	734		Multi-tiered & Service-Oriented Architectures	3
INFS	736		Technology for Mobile Devices	3
Networking Administration and Security				**9**
INFS	752		Advanced Network Tech & Management	3
INFS	754		Network Security & Intrusion Detect	3
INFS	756		Cloud Computing & Network Services	3
Data Management				**9**
INFS	762		Data Warehousing & Data Mining	3
INFS	764		Information Retrieval	3
INFS	766		Advanced Database	3
Healthcare Information Systems				**9**
INFS	701		Introduction to Healthcare Information	3
INFS	742		Healthcare Information Infrastructure	3
INFS	744		Healthcare Information Analysis	3
General				**9**
INFS	732		Emerging Technologies & Issues	3
INFS	752		Advanced Network Tech & Management	3
INFS	762		Data Warehousing & Data Mining	3

Curriculum Management

Since its inception, the MSIS program has experienced a number of changes to its curriculum. The changes are primarily driven by the needs of its students and the fast changing landscape of the IT world. **Appendix D** summarizes the significant changes to the curriculum and the justifications for these changes.

MSIS Program Accreditation Review (result of last MSIS visit)

In 2005, the IS program underwent a program review. The recommendations of the reviewer, industry changes and faculty input have inspired changes to improve the program and address reviewer comments. Overall, the review noted DSU's program strengths and its ability to support the MSIS program. The comments also highlighted areas for improvements, mostly centering around faculty scholarship and the need to 'jump start' research, and documenting program-improvement that is based on assessment.

Subsequent to the 2005 review, several of the faculty who teach in the program did complete terminal degrees. In addition, new terminally-qualified members have been hired to bring additional expertise in Information Systems and information assurance to the programs. Faculty have greatly increased their research activities as a result of the support provided by both the university and South Dakota Board of Regents (SDBOR). In addition, in September 2010, the university has engaged in an institution-wide effort to build the research culture in the form of an AQIP project entitled "Building a research culture at DSU. DSU's AQIP project on research had its first annual report (summer 2012) and has received AQIP reviewers' feedback. Overall, the comments are very positive and emphasize DSU's forward thinking as well as the criticality of the project. It also emphasizes how we proceeded in an open and transparent manner with significant communication and involvement from the faculty (an important aspect for successfully inducing change). The review is available at: http://www.dsu.edu/about/aqip/active-completed-projects.aspx. It is also worth noting that the Higher Learning Commission (HLC) peer reviewers' report on graduate programs at DSU recognized DSU efforts towards building a research culture. According to their report "*Within the last five years, DSU has made strides in developing its research culture. The University understands well in what ways and in what areas it needs to develop and/ or enhance research opportunities for faculty and students to raise its research profile*."

The program faculty and the institution have also responded to assessment-based improvement initiatives (closing the loop) regularly documenting reviews of assessment results as well change initiatives that are based on an analysis of these results. The results from the recent review of findings from program assessment activities as well as a summary of summary/changes can be found at: http://www.dsu.edu/academics/assessment/academic-assessment/major-field-grad-table.aspx.

D.Sc. Academic Program and Curriculum

Mission

The Doctor of Science (D.Sc. IS) in Information Systems is designed to prepare individuals for careers in research, teaching, and corporate employment.

Objectives

This D.Sc. program emphasizes applied scholarship, focusing on multi-disciplinary research projects with a strong emphasis on the productive application of information systems and information technology to organizations and their management. The

program supports a thriving and sustained applied research program that meets the research needs of the State of South Dakota, the university, and its graduate students. The degree program is intended to produce graduates with a commanding knowledge of information systems and of applications and research in information systems.

Graduates of the program will be qualified to pursue careers in:

- Teaching and research within an academic setting.
- Applied research within a corporate setting or government agency.
- Industry, particularly in data-intensive industries such as the banking and finance industry in the state, or within other data-intensive corporations.

The D.Sc. program assumes that a student enters the program with a master's degree that has provided a foundation in basic technical and business knowledge: computer hardware, computer software and programming skills, applied statistics, finance and economics. Students who enter the program without the proscribed background knowledge may be required to complete a series of master's-level, information systems courses.

Program Description and Requirements

The program requires 88 hours beyond the baccalaureate. All students must take the following:

- 63 credit hours of graduate course work:
    - 27 credit hours of masters-level in Information Systems (MSIS) which may be waived for students with an MSIS degree
    - 9 credit hours of research methods
    - 27 credit hours of research specialization including research seminars, core, and elective courses. Specializations include: Decision Support, Knowledge and Data Management; Network Administration & Security, and Healthcare Information Systems.
- 25 credit hours of dissertation
- Screening examination
- Qualifying Portfolio

Students who enter the program with graduate coursework in disciplines related to information systems may have to complete some master-level information requirements. Students who enter the program without a master's degree in information systems or related field and without an undergraduate background in information systems will be required to complete a series of foundational courses. Students may have up to 15 additional hours of coursework added to their program of study. **Table 3** lists the courses in the D.Sc. program while **Appendix E** contains the course descriptions.

Given the current enrollment and to ensure students complete their program in a timely manner, all MSIS core courses are offered twice a year while specialization courses are offered once a year. Doctorate level courses and specializations are offered once a year while the seminar courses are offered every semester. Elective credits are offered once a year. Full-time students with a master's degree in information systems should be able to complete this program in 3 years. The program must be completed within 7 years of the

semester of their admission. **Appendix F** contains the course rotation, while **Appendix G** includes a sample plan of study for a student entering in the fall semester.

Program Delivery

Courses in the D.Sc. in Information Systems program are offered using a variety of instructional delivery methods:

- Face-to-face on site in Madison, SD in a traditional classroom setting;
- Interactive video-conferencing via the Dakota Digital Network, offered at multiple sites in South Dakota (sites arranged to meet student needs);
- At a distance via Internet, using a combination of both live and/or encoded streaming videos of classes, interactive course web boards, course web sites, and e-mail. All courses are web-enhanced.

Instruction includes lectures, seminars, computer lab work, and guided research in the student's specialization.

Table 3. A list of courses in the D.Sc. program

Course Prefix	Course #	Course Title	Cr.Hrs
Knowledge Courses			**3-15**
INFS	601	Information Systems	3
INFS	605	Foundations of Programming	3
INFS	612	Management & Evaluation of IS	3
INFS	608	Applied Statistics	3
INFS	614	An Introduction to Research	3
Master's Level Core Courses			**18**
INFS	720	Systems Analysis and Design	3
INFS	724	Project & Change Management	3
INFS	730	Web Application Development	3
INFS	750	IT Infrastructure, Technology, and Network Mgmt	3
INFS	760	Enterprise Modeling, and Data Management	3
INFS	780	IT Strategy and Policy	3
Master's Level Specialization Courses (choose one)			
Application Development			**9**
INFS	732	Emerging Technologies & Issues	3
INFS	734	Multi-tiered & Service-Oriented Architectures	3
INFS	736	Technology for Mobile Devices	3
Networking Administration and Security			**9**
INFS	752	Advanced Network Tech & Management	3
INFS	754	Network Security & Intrusion Detect	3
INFS	756	Cloud Computing & Network Services	3
Data Management			**9**
INFS	762	Data Warehousing & Data Mining	3
INFS	764	Information Retrieval	3
INFS	766	Advanced Database	3

Healthcare Information Systems			9
INFS	701	Introduction to Healthcare Information	3
INFS	742	Healthcare Information Infrastructure	3
INFS	744	Healthcare Information Analysis	3
General			**9**
INFS	732	Emerging Technologies & Issues	3
INFS	752	Advanced Network Tech & Management	3
INFS	762	Data Warehousing & Data Mining	3
Research Methods Courses			**9**
INFS	805	Design Research Methods	3
INFS	810	Qualitative Research Methods	3
INFS	815	Quantitative Research Methods	3
D.Sc. Research Specializations: Select one of three specializations			
Decision Support, Knowledge and Data Management			**27**
INFS	830	Decision Support Systems	3
INFS	834	Knowledge Management	3
INFS	838	Dec Support/Knowledge Management Research	3
INFS	890	Research Seminar Topics	6
		Select four (12 cr.) electives from electives list	12
Information Assurance and Computer Security			**27**
INFA	701	Principles of Information Assurance	3
INFA	713	Managing Security Risks	3
INFS	848	Info Assurance/Computer Security Research	3
INFS	890	Research Seminar Topics	6
		Select four (12 cr.) electives from electives list	12
Healthcare Information Systems			**27**
HIMS	748	IS Tools and Applications for Healthcare Research	3
INFS/HIMS	820	Current Issues in Health Informatics	3
INFS	868	Health Informatics Research	3
INFS	890	Research Seminar Topics	6
		Select four (12 cr.) electives from electives list	12
Elective Courses: Select four courses			**12**
INFS	830	Decision Support Systems	3
INFS	834	Knowledge Management	3
INFS	762	Data Warehousing & Data Mining	3
INFS	764	Information Retrieval	3
INFS	766	Advanced Database	3
INFS	768	Predictive Analytics for Decision Making	3
INFS	770	Advanced Data Mining Applications	3
INFA	713	Managing Security Risks	3

INFA	715	Data Privacy	3
INFA	719	Software Security	3
INFA	721	Computer Forensics	3
INFA	723	Cryptography	3
INFA	725	Advanced Network Hacking	3
INFA	729	Advanced Web Hacking	3
INFA	739	Software Quality Assurance	3
INFA	741	Introduction to Banking	3
INFA	743	Information Security Management Systems	3
INFA	745	Compliance and Audit	3
INFA	751	Wireless Security	3

Curriculum Management

Since its inception, the D.Sc. program has experienced a number of changes to its curriculum. The changes are primarily driven by the needs of its students and the fast changing landscape of the IT world. **Appendix H** summarizes the significant changes to the curriculum and the justifications for these changes.

PART 4: PROGRAM ENROLLMENTS AND STUDENT PLACEMENT

B.S. Computer Information Systems/Information Systems

Enrollments

Current enrollment numbers stand at 62 students enrolled in the IS program (formerly the CIS program). **Figure 1** depicts the enrollment trends in the two programs. The IS program is facing reduced enrollments.

The IS major has 66.1% of the students enrolled for less than 12 credits. Only 32.3% of the students are taking at least one course on the Madison main campus. Therefore, 67.7% of the students are taking all of their DSU courses distantly. Of the distance students, 38.1% take at least one course at the University Center in Sioux Falls, SD.

Efforts are underway to emphasize the major and recruit students to this area. The persistence rates for the Fall 2010, Fall 2011 and Fall 2012 cohorts are 100%, 80% and 100%. The retention rates for Fall 2010 and Fall 2011 cohorts are 70% and 80%, respectively. As additional data is collected, attention will be directed to persistence, retention and graduation rates for this major.

With respect to diversity by ethnic composition, 92.9% of students are white and 7.1% are categorized as Other Races and unknown. By gender, 78.5% of current students are males and 21.5% are females.
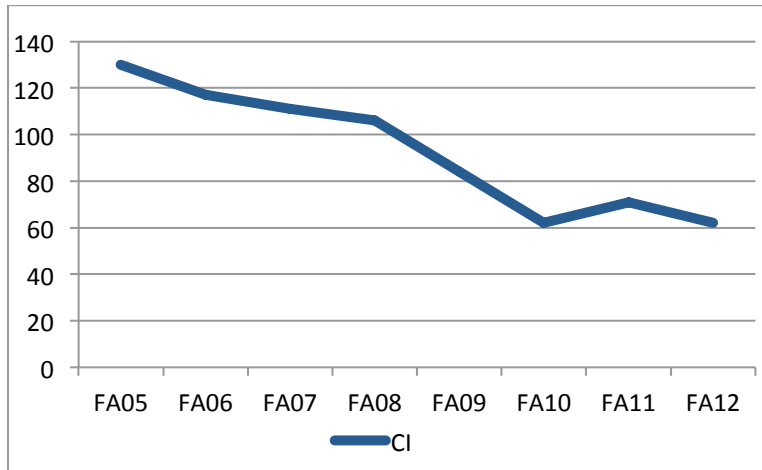
Figure 1. B.S. IS program enrollments

Placements

The Computer Information Systems and Information Systems (BS) graduates have a placement rate of 79%. In 2011, the students were placed 100% in South Dakota. It is typical for the IS graduates to be employed in the Midwest.

Placement Percentage	79%
Placed in South Dakota	100%
Average Entry Salary	$40,460

The IS graduates work in a variety of sectors. Examples from the government include South Dakota Bureau of Information & Telecommunications and South Dakota Library Network. Examples from education include: Presentation College and Mitchell Technical Institute. In the financial sector, examples include: Fishbank Financial, Wells Fargo Financial Bank, Citicards, CitiGroup, Premier Bankcard, Citibank, Metapayment Systems, Bancorp Bank and First National Bank. In the healthcare industry examples include: Avera Health Systems, Sanford USD Medical Center and Good Samaritan Society. Other employers include: Daktronics, Martin-Group, Midstates Printing, and a variety of Insurance and Media companies. Many B.S. IS graduates continue their education on a full time or part time basis.

MSIS Program

Enrollments

Table 4 summarizes the admission standards for the MSIS program relative to the other programs at DSU. Overall, while MSIA focuses on students with computer science and IT related background, the MSIS and MSET tend to attract students with diverse backgrounds. In particular, the MSIS program at DSU attracted students from diverse backgrounds ranging from IT related such as information systems and computer science, to engineering, education (teachers), and law. Since its inception in 1999, the MSIS program experienced continuous growth reaching 108 students during the 2008-09 academic year as shown in **Figure 2** below. **Appendix I** shows the course enrollments in the IS graduate programs.

From Fall 2005 to Fall 2012, there were 270 students who enrolled in the MSIS program, from which, 62 (23%) are still enrolled in the program, 155 (57.4%) graduated, and 53 (19.6%) are no longer in the program (suspended, withdrew, inactivated, or did not re-enroll in classes).

The MSIS program drew students from 21 different states and 6 different countries. Current enrollment is comprised of 46 U.S. students and 18 international students. International students came predominantly from India (48%) followed by Canada (14%) and Nepal (14%). With the increased competition from Britain and Australia, and a general decrease in applications from India, the MSIS program is experiencing fewer international applicants. Even after admitting applicants into the program, Visa issues may not allow the students to come to the U.S. to start their studies. Such a trend is likely remain and certainly warrants further emphasis on the domestic market.

With respect to diversity by ethnic composition, 55% of current students are white, 27% are Asian, 5% are Black, 2% American Indian, 5% are Hispanic, 2% are Pacific Islander, 2% are two or more races, and 5% are unknown. By gender, 80% of the current students are males. While computing fields have traditionally attracted more males than females, any effort to improve the gender diversity is encouraged.

Placements

The MSIS students and graduates work in a variety of sectors. Examples from the government include EROS Data Center, Internal Revenue Service, the State of South Dakota, and the U.S. Postal Service. Examples from education include: Daytona State College, Dakota State University, University of Minnesota-Crookston and Texas A&M University-Texarkana.

In the financial sector, examples include: Wells Fargo Services Company and CNA Surety/Western Surety Company. In the healthcare industry examples include: Avera Health Systems. Other employers include: Daktronics, U.S. Navy, Martin-Group, Midstates Printing, Schwan's Food Company and Toshiba.
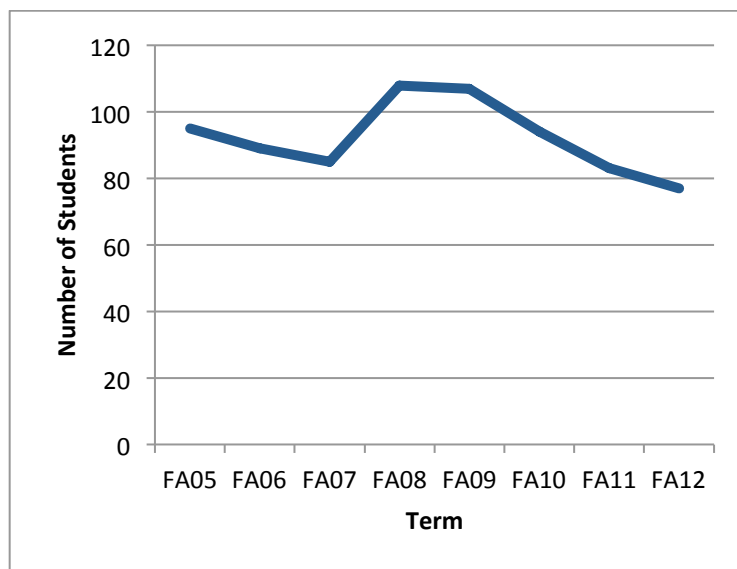

Figure 2. MSIS Enrollments by Academic Year

Table 4. Admission standards for the MSIS program relative to other DSU programs

Master of Science in Information Systems (MSIS)	Master of Science in Information Assurance (MSIA)	Master of Science in Health Informatics (MSHI)	Master of Science in Educational Technology (MSET)	Master of Business Administration in General Management (MBA)
Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.	Baccalaureate degree in computer science, computer engineering or software engineering from an institution of higher education with full regional accreditation for that degree.	Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.	Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.	Baccalaureate degree from an institution of higher education with full regional accreditation for that degree.
Minimum undergraduate grade point average of 2.70 on a 4.0 scale.	Minimum undergraduate grade point average of 3.0 on a 4.0 scale.	Minimum undergraduate grade point average of 2.70 on a 4.0 scale.	Minimum undergraduate grade point average of 2.7 on a 4.0 scale.	Minimum undergraduate grade point average of 3.0 on a 4.0 scale.
Satisfactory verbal and quantitative scores on the Graduate Record Examination.	Satisfactory verbal and quantitative scores on the Graduate Record Examination.	Satisfactory verbal and quantitative scores on the Graduate Record Examination.	Satisfactory verbal and quantitative scores on the Graduate Record Examination.	Satisfactory verbal and quantitative scores on the Graduate Record Examination or the Graduate Management Admission Test.
GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 9 credits successfully earned in another graduate program; all with full regional accreditation.	GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 9 credits successfully earned in another graduate program; all with full regional accreditation.	GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 9 credits successfully earned in another graduate program; all with full regional accreditation.	GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 9 credits successfully earned in another graduate program; all with full regional accreditation.	GRE/GMAT waiver granted to: students with BS in Business Admin with a 3.0 GPA or higher, two years of professional employment with an undergraduate GPA of 3.0 or higher; all with full regional accreditation.
Essential knowledge in both business fundamentals and information	Essay on security problem scenario. Students who do not have an undergraduate	Essential knowledge of information systems fundamentals. Essential knowledge	Demonstrated basic knowledge of computers and their application for educational	Students entering the program will come from a variety of

systems. Demonstrated by: BS in Information Systems; BS in Business Administration with information systems work experience; combination of degree and work experience.	degree in computer science, computer engineering or software engineering will be required to take specified computer science courses as a condition of admission	of healthcare delivery fundamentals. Demonstrated by: related undergraduate degree in health information management or healthcare field or a degree in MIS.	purposes. Demonstrated by: Technology endorsement from an accredited university; in-service position as technology coordinator in school; personal statement of technological competency.	backgrounds.

D.Sc. in IS Program

Enrollments

The bullets below summarize the admission standards for the D.Sc. program.

- Minimum undergraduate grade point average of 3.0 on a 4.0 scale (or equivalent on an alternative grading system).
- Students who enter the program with graduate course work in disciplines related to information systems may have to complete some master-level information systems requirements. Students who enter the program without a master's degree in information systems and without an undergraduate background in information systems will be required to complete a series of foundation courses.
- Essential knowledge in both business fundamentals and information systems. This knowledge includes the following:
    - o that they can analyze organizational systems and take appropriate action with particular business structures, particularly overcoming resistance to change;
    - o organizations, and the role of IT professionals in developing, acquiring and managing IS;
    - o systems including, setting a direction for information resources, managing technology resources, and managing the information systems function; (Windows and UNIX);
    - o ability to use spreadsheets for computations and analysis;
    - o ability to create spreadsheets that support problem-specific decision-making activities; and
    - o understanding of the principles of programming and the ability to program.
- The knowledge requirement can be met in a variety of ways, including: an undergraduate degree in MIS; specific undergraduate or graduate course work that covers required knowledge; appropriate, verifiable IS/IT or management experience. Students using experience to meet the knowledge requirements may be required to demonstrate competency in the subject.
- Satisfactory verbal and quantitative scores on the Graduate Record Examination

   o GRE waiver granted to: students with 3.25 GPA undergraduate; or undergraduate degree earned at least 15 years ago; admission to and at least 9 credits successfully earned in another graduate program; all with full regional accreditation.

In particular, the D.Sc. program at DSU attracted students from diverse backgrounds ranging from IT related such as information systems and computer science, to engineering, education (teachers), and law. Since its inception in 2006, the D.Sc. program experienced continuous growth reaching 58 students during the 2011-12 academic year as shown in **Figure 3** below. **Appendix I** shows the course enrollments in the IS graduate programs.

From Fall 2006 to Fall 2012, there were 88 students who enrolled in the Doctorate program, from which, 41 (46.6%) are still enrolled in the program, 9 (10.2%) graduated, and 38 (43.2%) are no longer in the program (suspended, withdrew, inactivated, or did not re-enroll in classes).

The D.Sc. program drew students from 14 different states and 6 different countries. Current enrollment is comprised of 36 U.S. students and 15 international students. International students came predominantly from India (31%) followed by Jordan (18%) and Nepal (18%). With the increased regulations and tougher Visa regulations, the D.Sc. program is experiencing fewer international applicants. Even after admitting applicants into the program, Visa issues may not allow the students to come to the U.S. to start their studies. As referenced above, the MSIS enrollment trend is similar to that of the D.Sc. As noted above in the MSIS as well, such a trend is likely to remain and certainly warrants further emphasis on the domestic market.

With respect to diversity by ethnic composition, 51% of current students are white, 29% are Asian, 6% are Black, 0% American Indian, 4% are Hispanic, 0% are Pacific Islander, 6% are 2 or more races, and 4% are unknown. By gender, 90% of the current students are males. While computing fields have traditionally attracted more males than females, any effort to improve the gender diversity is encouraged.
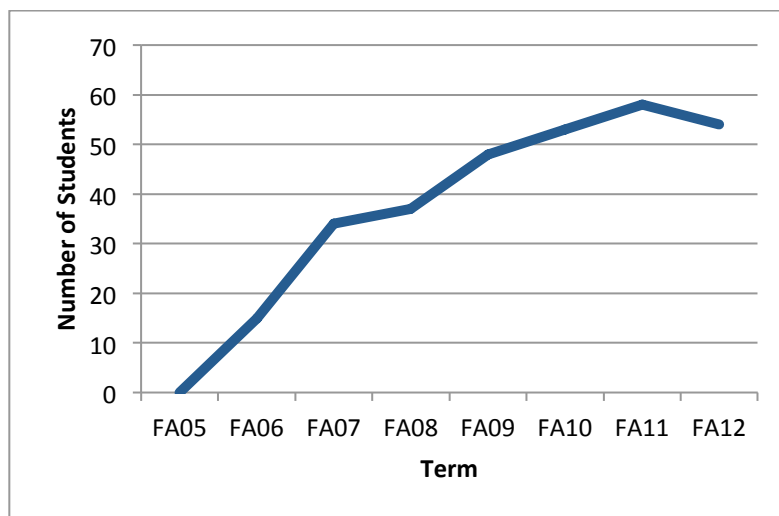

Figure 3. D.Sc. Enrollments by Academic Year

Placement

The D.Sc. graduates work in a variety of sectors. Examples include: Black Hills State University, Drexel University, Dakota State University, Niagara University, and Hastings College, DigiKey, Indiana University East, Target, and Northcentral Michigan College.

Actions taken to grow graduate enrollments

We are currently in the process of creating a comprehensive marketing plan for the institution, including graduate programs. By studying our data on current students and past recruits, we can surmise our target audience and then create a plan to reach that audience. At the present time, we are involved in the following recruitment activities:

- Job Fairs: We attend the annual SD Big Job Fair in Sioux Falls in February, the annual Technology & Innovation in Education in Sioux Falls or Rapid City held in April, the annual Dakota State University Career Fair in October in Madison. The Graduate Office has also participated in two virtual fairs through Hobson's where we recruited for Asian and Latin international students. Faculty and the Graduate Office attend informational nights offered at the University Center in Sioux Falls.
- Contacts with inquiries: The Graduate Programs Office uses the EMAS Recruitment Pro management system to recruit prospective students. Students that inquiry through our Web Form, our website, fairs, or that we receive from online marketing directories are entered in our student information systems and then recruited through EMAS. We have also purchased names from GRE Search Service through Hobson's to recruit students.
- Online Directories: The Office of Graduate Studies and Research continues to market online with the following directories listed below.
    - Google AdWords
    - GetEducated.com
    - Gradschools.com
    - Graduate School Guide
    - Peterson's
    - Hobson's TOEFL Access and Gradview
    - GradSource.com
    - Princeton Review
- Printed Advertisement: The Office of Graduate Studies continues to market with the following print advertisements listed below.
    - USA Today's Graduate Guide
    - Peterson's
    - Newsweek
- DSU undergraduates in the business and computer programs: We have a 4+1 program at DSU that enables undergraduate students to obtain both a Bachelors and a Master's degree in five years. This is accomplished by allowing these students to take selected graduate courses during their senior year. These courses will also count towards their undergraduate course requirements thereby fast-tracking their completion of a graduate program. This is available for students seeking the MSIA or MSIS degree.

- On campus seminars and workshops:
  - o DSU hosts the annual South Dakota Society for Technology Education (SDSTE) conference in October.
  - o DSU offers a fall and spring Center of Excellence Symposium each year.
  - o In May 2009 DSU hosted the 4th annual Midwest Association for Information Systems Conference (MWAIS).
  - o DSU hosted the DSU-IBM Cloud Computing Symposium in February, 2011.
  - o DSU held a MSIS Showcase for any student to attend in March 2011; this is where we showcased the MSIS program to prospective undergraduate students.
  - o DSU hosted the DakotaCon 2012 and 2013 events for South Dakota's Premiere Security Event in April, 2012 and March 2013, respectively.

PART 5: FACULTY CREDENTIALS

A list of the faculty who teach in the undergraduate and graduate IS fields at DSU and their academic credentials are included in **Table 5**. Current vitae for the faculty listed in **Table 5** are included in **Appendix J** of the self-study web site.

Table 5. DSU Faculty Teaching Courses in the IS Programs

Faculty Member	Rank	Academic Credentials	Level of Teaching (UG, GR, or Both)	Faculty Homepages
Dorine Bennett	Professor	Ed.D.	Both	http://www.homepages.dsu.edu/bennettd/
Yenling Chang	Assistant Professor	Ph.D.	Both	
Rick Christoph	Professor Emeritus	Ph.D.	Both	http://www.homepages.dsu.edu/christor/
Kyle Cronin	Instructor	MS	Both	
Amit Deokar	Associate Professor	Ph.D.	Graduate	http://www.homepages.dsu.edu/adeokar/
Dawn Dittman	Lecturer	D.Sc.	Undergraduate	
Omar El-Gayar	Professor	Ph.D.	Graduate	http://www.homepages.dsu.edu/elgayaro/
Kathy Engbrecht	Instructor	MS	Undergraduate	
William Figg	Professor	Ph.D.	Both	http://www.homepages.dsu.edu/figgw/
Derek Franken	Instructor	MPA	Undergraduate	
Tom Halverson	Associate Professor	Ph.D.	Undergraduate	http://www.homepages.dsu.edu/halverto/
Joyce Havlik	Instructor	MS	Both	http://www.homepages.dsu.edu/havlikjo/
Rob Honomichl	Instructor	MS Ed.	Undergraduate	
Stephen Krebsbach	Associate Professor	Ph.D.	Both	http://www.homepages.dsu.edu/krebsbas/
Jun Liu	Assistant Professor	Ph.D.	Graduate	
Jim McKeown	Assistant Professor	Ph.D.	Undergraduate	http://www.homepages.dsu.edu/mckeownj/
Matt Miller	Assistant Professor	Ph.D.	Undergraduate	
Lynette Molstad-Gorder	Professor	Ed.D.	Both	http://www.homepages.dsu.edu/molstadl/
Barb Myers	Assistant Professor	Ed.D.	Undergraduate	http://www.homepages.dsu.edu/myersb/
Cherie Noteboom	Assistant Professor	Ph.D.	Undergraduate	
Chris Olson	Instructor	MS	Both	http://www.homepages.dsu.edu/olsonch/
Josh Pauli	Associate Professor	Ph.D.	Both	http://www.homepages.dsu.edu/paulij/

Wayne Pauli	Associate Professor	Ph.D.	Both	http://www.homepages.dsu.edu/pauliw/
David Peak	Associate Professor	Ph.D.	Both	http://www.homepages.dsu.edu/peakd/
Ashley Podhradsky	Assistant Professor	D.Sc.	Both	
Rick Puetz	Professor	JD	Both	http://www.homepages.dsu.edu/puetzr/
Michael Roach	Assistant Professor	Ph.D.	Both	
Pam Rowland	Instructor	MS	Undergraduate	http://www.homepages.dsu.edu/rowlandp/
Surendra Sarnikar	Associate Professor	Ph.D.	Graduate	http://www.homepages.dsu.edu/ssarnikar/
Amanda Schwartz	Instructor	ABD Ph.D.	Undergraduate	
Ronghua Shan	Associate Professor	Ph.D.	Both	http://www.homepages.dsu.edu/shanr/
Zixing Shen	Assistant Professor	Ph.D.	Both	
Kevin Streff	Associate Professor	Ph.D.	Graduate	http://www.homepages.dsu.edu/streffk/
Daniel Talley	Professor	Ph.D.	Both	http://www.homepages.dsu.edu/talleyd/
Deb Tech	Assistant Professor	Ph.D.	Both	http://www.homepages.dsu.edu/techd/
Dianxiang Xu	Associate Professor	Ph.D.	Graduate	
Brent Tulloss	Instructor	MS	Undergraduate	http://www.homepages.dsu.edu/tullossb/
Jack Walters	Assistant Professor	Ph.D.	Both	http://www.homepages.dsu.edu/waltersj/
Lee Threadgold	Adjunct Instructor	MS	Undergraduate	
Mike Waldner	Adjunct Instructor	MS	Undergraduate	
Brian Ahrendt	Adjunct Instructor	JD	Undergraduate	
Randall Harkless	Adjunct Instructor	Ed.D.	Undergraduate	
Brandi Shabino	Adjunct Instructor	MS	Undergraduate	
David Wrotenbery	Adjunct Instructor	MBA/MIS	Undergraduate	
Daniel Wubbena	Adjunct Instructor	MBA	Undergraduate	

Table 6 below indicates a steady growth in grant productivity, as the result of all institutional investments. DSU grants and contract activities exhibit a steadily increasing trend with a peak attained in FY10 because of large American Recovery and Reinvestment Act (ARRA) funded grants.

Table 6. DSU Faculty Grant Proposal Submissions and Awards

	# Proposals Submitted	$ Value Submitted	# Proposals Awarded	$ Value Awarded
2007	39	$4,239,598	20	$1,803,628
2008	22	$3,232,523	31	$1,981,933
2009	21	$3,765,820	20	$2,837,284
2010	40	$27,980,305	25	$8,728,857
2011	26	$8,997,674	25	$5,181,311
2012	23	$5,026,008	26	$2,789,071

Source: DSU Office of Grants and Contracts The numbers reflect submission and award activities during the fiscal year. Therefore, a grant awarded in a particular year may be the result of a submission in a prior year.

Undergraduate Faculty-Student Research

Undergraduate research enhances the educational experience and fits well with the "Technically, we're better" slogan. Research allows faculty and students to work closely

on projects. Furthermore, these projects allow students to achieve a depth not possible in a traditional course. Alternatively, students can experiment in new areas of study that are outside of the core curriculum. Recent research activities are as varied as the students that attend DSU. A few highlights will be provided here to illustrate the types of research performed by undergraduate students.

- Applied research has proven to be a very effective learning tool as well as an economic development engine that has created multiple business relationships with regional companies who employ undergraduate students while students and then also upon graduation.
- Several research projects have studied computer/network security issues and tools. This research has helped the design on two (2) fast growing majors on the DSU campus, namely, Computer and Network Security (CONS) and Network and System Administration (NSA).
- Students work on several campus focused projects such as assisting with the development environment used to support academic development pursuits of the undergraduate population.
- The Center of Excellence in Computer Information Systems coordinated many student projects and was instrumental in the development of the student research initiative (SRI). This program has become part of the function of the Vice President of Academic Affairs Office and Office of Research.
- The campus wireless network was designed and installed by students. The Wireless Mobile Computing Initiative (WMCI) has benefited greatly from student involvement. Undergraduate students are playing a key role in the review and forthcoming proposal of the new computing initiative.
- Undergraduate students have presented their research at national conferences in conjunction with faculty member's research.
- Students are recruited to work with faculty from other colleges on computational projects in physics, chemistry, biology, and mathematics.

For multiple years the College of BIS has been involved with National Science Foundations' (NSF) Research Experiences for Undergraduates (REU) program. This program has played a key role in building interest in undergraduate research and for adding student numbers into the graduate programs at DSU.

Graduate Faculty-Student Research

Faculty also engaged students in research, either through their work as graduate assistants or as part of their information integration course (IS project). The following **Appendix K** is a select list of faculty-student research.

Faculty Workload

All faculty members are expected to fulfill the basic professional responsibilities of the mission of the institution as outlined in the Interim Terms and Conditions of Employment, January 2012, Section 10.3. Per that document, the standard two-term workload for faculty unit members requires 30 credit hours of undergraduate instruction, or its equivalent, per academic year. The institution's faculty workload policy establishes the equated workload credit earned by faculty who teach graduate-level courses and who

supervise graduate research assistants and graduate teaching assistants. That policy is included in **Appendix L** of the self-study web site. The differential for graduate-level courses is intended to provide the additional time graduate faculty need to effectively develop and offer courses, advise students on their curriculum, or advise projects or theses at the master's degree level.

Faculty Development

The institution also routinely sets aside approximately $54,000 for instructional and professional travel and for faculty training. The institution's current guidelines for distribution of travel and training funds are included in **Appendix M** of the self-study web site for instructional and professional development funds and for training funds. There are additional funds for specialized training and summer grants. Moreover, the university administers an internal grant competition for faculty and students for research support.

During the program development phase, graduate faculty were given an additional course reduction or a summer course development grant to help with course preparation. This is especially important for courses in the specializations, where faculty expertise needs to be more fully developed. MSIS program faculty have benefited from such program and a number of MSIS courses have been developed using funds from this development program. A copy of the latest RFP for the institution's summer course development program is included in **Appendix N** of the self-study web site.

PART 6: ACADEMIC AND FINANCIAL SUPPORT

Undergraduate Programs Support Services

The College of Business and Information Systems office is the central point of support for undergraduate students with majors within this college. The central office is located in the Dean's office, which is located in the college building. The office is also provided with several work-study positions that are tasked with helping faculty whenever help is requested.

Table 7. The College of Business and Information Systems office staff

Name	Title
Tom Halverson	Dean, College of Business and Information Systems
Wayne Pauli	Associate Dean, College of Business and Information Systems
Kathy Engbrecht	Retention Specialist
Tracy Sursely	Senior Secretary

Graduate Programs and Research Support Services

The Office of Graduate Studies and Research was established to promote and support graduate education at DSU. The Dean of Graduate Studies and Research collaborates with and supports the functions and responsibilities of the Graduate Council and the graduate program committees within each college and serves as the advocate for graduate education and graduate student support at DSU. The Office of Graduate Studies and Research staff is included in **Table 8** below.

The day-to-day operations and services provided by the Office of Graduate Studies and Research are client-centered. The office offers guidance and help to students from the first inquiry to graduation. This includes providing accurate and timely program information and maintaining the graduate programs website with current information for degree-seeking students (URL: http://www.dsu.edu/gradoffice/index.aspx). The office also facilitates the recruitment of prospective students, the application process, assisting in setting up interactive audio-video for remote sites in South Dakota and online for distance students. Other services provided by the Office of Graduate Studies and Research include assisting with course scheduling and course rotations; making students aware of changes in schedules, rotations, and graduate policies; assisting with registration; supporting the assistantship committees; monitoring student progress toward graduation; and serving as a liaison among other support staff, faculty, and administrators.

Table 8. The Office of Graduate Studies and Research staff

Name	Title
Omar El-Gayar	Dean, Office of Graduate Studies and Research
Jennifer Mees	Program Assistant II
Erin Blankespoor	Senior Secretary

Library Resources and Services

The mission of the Karl E. Mundt Library and Learning Commons is to supply the library and information needs of the students, staff, and faculty of Dakota State University and to support the University's stated mission and goals.

In an information society, information literacy is critical. DSU students should be able to find, evaluate and use information for problem solving and decision making in all aspects of their lives -- at home, in the workplace, and as informed citizens in a democratic society. The goal of the library is to provide the instruction and tools students need to be effective information users.

A Learning Commons is defined as a student-centered collaborative learning place. Increasing use of technology as a means of accessing information and the recent shift towards cooperative learning and group study have brought changes in the way students use academic libraries and library resources. In the Mundt Library and Learning Commons they are experimenting with new ways to combine information resources, services, technology, and research assistance. They partner with the DSU Retention Specialist to provide space for tutoring, and provide art gallery space managed by the College of Arts and Sciences.

The Library provides access to an extensive collection of materials through its online library catalog which includes the over 4.5 million holdings of more than 70 member libraries of the South Dakota Library Network (SDLN). In addition to its print holdings, the Library subscribes to numerous electronic indexes and full text research databases, most notably, EBSCO's Academic Search Premier, IEEE CS Digital Library, ProQuest Research Library, ABI-Inform, MLA Bibliography, Lexis-Nexis and many, many more. These databases are authoritative scholarly research tools needed to support DSU's academic programs. The Library's website provides the on- and off-campus community

with direct access to the information resources critical to the various disciplines. Materials held by other libraries are also readily available through the interlibrary loan system so rarely is the Library unable to quickly meet an individual's information needs. The Library also provides online access to tutorials and other research aids for the independent scholar.

The most important and best resources available are the library staff. These trained professionals are here to help you find and use the resources you need – in person or online by using the "Ask a Librarian" link on the Library's website. In addition to the collections, systems and services offered, library staff provides assistance and instruction to faculty and students through workshops, classroom and one-to-one instruction.

The Library has a wide array of digital equipment like video cameras and digital audio recorders for use by students as well as standard AV equipment like video players and format converters. Meeting rooms, collaboration spaces, study rooms and viewing rooms equipped with TV/DVD/VCR or video projectors connected to various types of players are also available. Many computer peripheral devices like cameras and recording devices are available for check out. Networked computers and scanners are located on the main floor as are many tables equipped with power sources for quick and easy Tablet PC battery recharging between classes.

Peer tutoring services are available in the Tutor Center located on the main floor of the Library. Additional tutorial support is provided online in Lynda.com, and Learning Express Library; link to them in the Database Quicklinks drop down box on the Library's main page.

In addition to the collections, systems and services offered, library staff also provide assistance and instruction to faculty and students through workshops, classroom instruction, and one-to-one. Library faculty collaborates with course faculty to ensure students have the research background necessary to complete course assignments. Library faculty develops tutorials, subject guides, and other instructional materials to support classroom learning on campus and at a distance.

It is also the Library's goal to graduate students who are able to find, evaluate, and use information to solve problems and to make decisions effectively. Graduates should have the knowledge and skills to function successfully as continuous learners in a continuously changing information world. To successfully meet its goals, the library provides excellent collections, information systems, services, instruction, and staff. The professional library staff is included in **Table 9** below.

Table 9. Professional Library staff

Name	Title
Ethelle Bean	Assoc. VP/ Professor / Library Director
Mary Francis	Assistant Professor / Instruction / Reference Librarian
Risë Smith	Professor / Digital Access & Design Librarian

Extended Programs Support Services

The Office of Extended Programs is responsible for program planning, marketing, program implementation and overall management of courses and programs offered by

alternative delivery (i.e., Internet, DDN) or at off-campus locations by Dakota State University. Working with the colleges and the institution's academic support areas, Extended Programs designs and develops active and collaborative degree programs at a distance or at off-campus sites such as the University Center in Sioux Falls.

The Extended Programs staff is located in the Tunheim Classroom Building. The staff serves the needs of students who are enrolled in the online and videoconferencing courses at DSU and in courses at off-campus locations. The office is the mainstay of distance services to students, working with the administrative offices of DSU to provide these services. The office staff assists faculty in the design and implementation of courses delivered by various forms of technology. Proctoring services for online courses are provided by the Extended Programs office at DSU. The video conferencing classrooms on campus are located in the Tunheim Classroom Building (TCB). The Dakota Digital Network (DDN) room is located in TCB 103. The Governor's Electronic Classroom (GEC) is located in TCB 111 and the third room is located in TCB 109.

The Office of Extended Programs is staffed with the Director of Extended Programs, the Manager of Instructional Technology, an Instructional Technology Specialist, a Communications Network Specialist, the Distance Education Specialist, and a Senior Secretary as listed in **Table 10** below. This team serves the needs of students who are enrolled in the online and videoconferencing courses at DSU. The office is the mainstay of distance services to students, working with the administrative offices of DSU to provide these services. The staff also serves the web needs of faculty, staff and students at DSU and the needs related to educational technology. The office staff assists faculty in the design and implementation of courses delivered by various forms of technology.

Table 10. Extended Programs support staff

Name	Title
Brent Van Aartsen	Communications Network Specialist, Computing Services
Peg O'Brien	Director, Extended Programs
Susan Eykamp	Distance Education Specialist, Extended Programs
Annette Miller	Senior Secretary, Extended Programs
MingMing Shao	Instructional Technology Specialist, Extended Programs
Haomin Wang	Manager of Instructional Technology, Computing Services

Computing Support Services

DSU has a comprehensive technology infrastructure supporting universal (on and off campus) access to computing resources. Part 7 includes a detailed discussion of facilities and equipment. The Computing Services staff listed in **Table 11** below provides technology support to faculty, staff, and students.

Table 11. Lead Computing Services support staff

Name	Title
Stephanie Baatz	Help Desk Manager
Joshua Boldt	Computer Support Analyst
Craig Miller	Director of Networking Services
David Overby	Chief Information Officer
David Vickmark	Technology Integration Specialist

Administrative Support Staff

Current administrative staff will provide the academic support services to deliver undergraduate and graduate programs at DSU. The administrative support personnel who are particularly critical to the delivery of the graduate programs are included in **Table 12** below.

Table 12. Administrative Support Staff

Name	Title
Carrie Ahern	Director of Institutional Effectiveness and Assessment
Sandy Anderson	Registrar, Enrollment Services
Steve Bartel	Director of Student Union/Residence Life
Keith Bundy	Director of Student Development / Asst. Dean for Student Development
Amy Crissinger	Associate VP for Enrollment Management/Marketing
Dale Davis	Director of Bookstore
Jeff Dittman	Director of Athletics
Amy Dockendorf	Controller
Dan Friedrich	Director of the Center for the Advancement of Health Information Technology
Denise Grayson	Director of Financial Aid
Maria Harder	Director of Human Resources
Sara Hare	Director of Budget & Grants Administration
Jennifer Hauf	Director of Food Service
Pat Keating	Director of Physical Plant
Mickie Kreidler	Director of Sponsored Programs
Marie Lohsandt	Director of Career Services / Asst. Vice President for Student Affairs
David Overby	Director of Computing Services
Mandy Parpart	Director of Student Activities
Jona Schmidt	Director of Alumni

Academic Advising

Undergraduate students are assigned advisors in the College of BIS and all BIS faculty are expected to contribute to academic advising. Advisees are assigned based on majors and students can request a change in advisor at any time. Some faculty elect to participate in the Freshman Seminar activities while others focus more on graduate and upper level advising duties. The retention efforts on campus have led to increased analysis of the advising process.

Graduate students in the MSIS and D.Sc. programs will be required to work with their advisors to complete a Plan of Study within their first semester in the program. Information regarding advising, program rules and requirements, rotations, knowledge courses, and expected milestones will be provided through the online materials posted on the Graduate Office website and in the Graduate Catalog. Program faculty members are assigned as the advisors for students in the MSIS and D.Sc. programs. Advising guidelines for the MSIS and the D.Sc. programs are available at: http://www.dsu.edu/msis/msis-advising-guidelines.aspx and http://www.dsu.edu/doctor-of-science/dsis-advising-guidelines.aspx, respectively.

Financial Support to the Students

Financial aid opportunities are expected to come from institutional and private sources. Financial aid policies and procedures for application, award, and distribution have already been developed to support the graduate programs at DSU. DSU has also certified alternative loan eligibility for enrolled graduate students (based on their educational costs) to regional and national lenders.

PART 7: FACILITIES AND EQUIPMENT

The institution has more aggressively pursued corporate and government partnerships that result in technology donations or deep, educational discounts. For example, DSU is a member of Microsoft Academic Alliance providing access to leading software development frameworks such as the .NET Studio, project management software (Microsoft Project), database servers (Microsoft SQL) and CASE tools (Microsoft Visio). The alliance also allows DSU to provide software licenses for its student at deeply discounted prices. DSU is also one of twenty college and universities across the country registered as an IBM Academic Skills Cloud participating school. This community of leaders will innovate with cloud computing in their institutions, and transforming education as result. The program allows DSU to use IBM software in classrooms and labs at no charge delivered via IBM's cloud computing service in real time over the Internet. This saves the cost and effort of having to install, manage, and update the products on their own system.

DSU has an academic alliance with VMWare and hosts an extensive virtual computing environment that provides students with access to selected software at no cost. The computing environment allows access to data mining, analytics, simulation and various software design and programming platforms. The University has spent to date about $195,000 to develop a virtual and cloud computing environment for graduate computing needs.

Since the MSIS and D.Sc. programs are distance programs, where all classes are conducted in the video conferencing classrooms on campus are located in the Tunheim Classroom Building (TCB). These classrooms are equipped with audio and video equipment that allows for live broadcasting via the Dakota Digital Network (DDN) to remote sites across the state of South Dakota. Moreover, to accommodate Internet students, classes are recorded, digitized and video-streamed over the Internet. A dedicated video server handles all Internet video.

For a technology-intensive graduate degree program, the computing facilities available for graduate faculty and students are a primary concern. These facilities must be available, accessible and adequately supported to enable students to complete their coursework and to support faculty teaching needs and the scholarly activities of both faculty and students. Since the inception of the D.Sc. program in 2006, DSU made significant investments in its IT infrastructure including an Academic Support Cloud (a virtualized infrastructure providing on-demand access to computing resources), an Information Security Lab, and an Advanced Informatics Research Lab (http://www.dsu.edu/research/airl/index.aspx). A complete description of the institution's

current network capabilities and its current computer lab facilities and equipment is included in **Appendix O** of the self-study web site.

In addition, on an annual basis, the institution makes a major investment in technology, making it one of the most technologically sophisticated universities of its size and type. In FY11, the institution spent about $896,000 for hardware and software purchases, excluding routine maintenance costs. **Appendix P** lists the software purchases the Office of Graduate Studies and Research has purchased since the inception of the D.Sc. program.

PART 8: ASSESSMENT AND STRATEGIC PLANS

Program Assessment

The assessment plans for the B.S. IS, MSIS and D. Sc. programs were developed by the faculty and adhere to the university's guidelines for major-field assessment.

The faculty-based Assessment Coordinating Committee reviews and approves all major-field assessment plans and reviews annual assessment reports from the colleges. Both general education and major-field assessment processes include an annual evaluation of data linked to measurement of student learning outcomes. Data are aggregated and reported annually in web-based data tables. As part of major-field assessment, discipline-specific faculty committees review the data and provide a formal "Summary Analysis and Changes for Improvement Report" to the Assessment Coordinating Committee annually. The undergraduate and graduate assessment plan, data tables and summary reports can be found at http://www.dsu.edu/academics/assessment/academic-assessment/major-field-undergrad-table.aspx, and http://www.dsu.edu/academics/assessment/academic-assessment/major-field-grad-table.aspx, respectively.

Strategic Planning

The current institutional strategic plan, initiated in Fall 2007, was to be retired in Spring 2012. However, because of the transitory time accompanying the change in DSU's presidency, the University made the decision to extend its current strategic plan for another two years. The current 2007 - 2014 strategic plan is essentially a two-year extension of the 2007-2012 strategic plan, "Dakota State University: Focused." Extensive discussion and planning occurred prior to adoption of the strategic plan in August 2007 and extensive discussion and planning have occurred since that adoption and as part of the decision to extend it for the additional two years to accommodate an extended presidential search. For example, the University had extensive discussions about the format for the next strategic plan and one area of agreement was that the new plan would more closely tie the University's strategic goals to the nine AQIP categories, with specific goals to address focus areas in each of the AQIP categories.

Dakota State University's strategic plan reflects the following set of values and shared commitments to:

- an uncompromising passion for DSU's information technology mission.
- the use of data-informed decision making to improve and enrich the university's programs.

- academic research that produces, adapts and incorporates new discipline- and pedagogy-based knowledge.
- an unwavering support for student success and learning by promoting active engagement and creative problem-solving.
- a relentless pursuit of emerging technologies.
- effective communication that is open and honest.
- a university experience that promotes an understanding of our diverse world.
- cutting-edge academic programs focused on its information-technology mission.

The plan includes these over-arching strategic goals:

1. Expand current information technology leadership through cutting-edge programs.
2. Optimize on-campus student enrollment and enhance program quality by recruiting high-ability students.
3. Increase student retention and graduation by providing an exceptional student experience.
4. Advance DSU's emphasis on applied research.
5. Extend DSU's educational outreach through online and alternative-location delivery.
6. Promote increased visibility and recognition of the University.
7. Develop new sources of revenue.

Each of these strategic goals is intended to help DSU fulfill its institutional mission and accomplish its institutional vision. Each campus unit has developed a set of strategic initiatives that align with and assist the institution in reaching its campus-wide, long-term goals. The unit goals are publicly declared in open campus meetings of the IEC and progress on those initiatives is tracked in a variety of methods: through the online Balanced Scorecard, annual evaluations of administrators, discussions during administrative council retreats, committee agenda items, and during budget hearing presentation.

The MSIS and D.Sc. IS strategic plans can be found in **Appendix Q and R**, respectively.