South Dakota State University – Jerome J Lohr College of Engineering – Department of Electrical Engineering and Computer Science Ph.D. in Computer Science External Reviewer Summary

4-20-2020

This document serves as an introduction to the Jerome J Lohr College of Engineering and its current offerings.

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University and Campus Profile

South Dakota State University located in Brookings, S.D., a community of more than 22,000 residents in eastern South Dakota, ranked No. 5 on the "Top 10 Best Small Towns 2013" list by Livability.com. Brookings is 55 miles north of Sioux Falls on Interstate 29 and one-half hour west of the Minnesota border, within a day's drive of Minneapolis (200 miles), Omaha (230 miles), Des Moines (330 miles) and Kansas City (415 miles). The city is the world headquarters for Daktronics and Larson Manufacturing. Other large businesses that call Brookings home include Falcon Plastics, 3M, Bel Brands USA and Rainbow Play Systems. Several start-up companies have established and grown in Brookings, focused around animal healthcare and food products. It should be noted that the U. S. Geological Survey's (USGS) Earth Resources Observation and Science (EROS) Center is located approximately 50 south east of Brookings. It currently houses one of the largest computer complexes in the Department of the Interior and is a source of Landsat Systems data, and others, that is used by many SDSU researchers.

Overview of SDSU

South Dakota State University was founded in 1881 as the public land-grant institution under the Morrill Act. It is the state's largest, most comprehensive higher-education institution. As South Dakota's Morrill Act land-grant university, SDSU had a fall 2019 enrollment of 11,518 students from all 50 states and 83 countries. Students can choose from 82 majors, 35 specializations, 94 minors, 36 master's degree programs, 15 Ph.D. programs and two professional doctorates its eight academic colleges in collaboration with the Graduate School. The university also offers courses at various off-campus sites as well as undergraduate and graduate programs online through the Office of Continuing and Distance Education.

Jerome J Lohr College of Engineering Profile

The Jerome J. Lohr College of Engineering, led since June 2018 by Dr. Bruce Berdanier, consists of six academic departments, offering degrees in 8 disciplines, and enrolling 1646 Undergraduate, 256 MS, and 57 Ph.D. students. The departments and their degrees are shown below (http://www.sdstate.edu/jerome-j-lohr-engineering/departments-fields-study). Much of the recent growth and new construction of facilities can be traced back to our very generous alumni and donors. The college was recently renamed the Jerome J. Lohr College of Engineering in recognition of his leading the effort, both financially and in recruiting new donors, to develop and fund the new engineering quadrant. This is the only engineering college in the South Dakota system to be names after a donor. This is a source of great pride to our students, faculty, and staff.

Departments, Programs and Degrees within the J. Lohr College of Engineering.

Agriculture & Biosystems Engineering

- Agricultural, Biosystems & Mechanical Engineering (PhD)
- Agricultural & Biosystems Engineering* (BS)
- Agricultural & Biosystems Engineering* (MS)
- Engineering for Precision Agriculture (minor)

Civil and Environmental Engineering

- Civil Engineering* (BS)
- Civil Engineering (MS)
- Civil Engineering (PhD)

Construction & Operations Management

- Construction Management*** (BS)
- Construction (minor)
- Electronics Engineering Technology (BS)
- Operations Management (BS)
- Operations Management (MS)

Electrical Engineering & Computer Science

- Computer Science** (BS)
- Computer Science (minor)
- Computer Science (MS)
- Electrical Engineering* (BS)
- Electrical Engineering (MS) & (Ph.D.)
- Informatics (minor)
- Software Engineering (minor)

Mathematics & Statistics

- Data Science (MS)
- Mathematics (BS)
- Teaching
- Mathematics (minor)
- Mathematics (MS)
- Statistics Specialization
- Statistics (MS)
- Statistics (minor)
- Computational Science & Statistics (Ph.D.)

Mechanical Engineering

- Agricultural, Biosystems & Mechanical Engineering (PhD)
- Mechanical Engineering* (BS)
- Mechanical Engineering (MS)
- Sustainable Energy Systems (minor)

Master of Engineering

- Engineering (MEng)

Interdisciplinary Minors

- Minor in Biomedical Engineering
- Minor in Nuclear Engineering

Associated Program

- Economics and Management Initiative

* Accredited by the Engineering Accreditation Commission of ABET, http://www.abet.org
** Accredited by the Computing Accreditation Commission of ABET, http://www.abet.org
*** Accredited by the American Council for Construction Education

Electrical Engineering and Computer Science Department Profile

On October 30, 1979, Dr. Junis Storry, Dean of Engineering, recommended to the Vice-President for Academic Affairs, Dr. Harold Bailey, Jr., that the Computer Science Department be created. In February 1980, the Board of Regents authorized a minor in computer science at SDSU. On June 6, 1980, Dr. Bailey recommended to President Sherwood Berg that a Computer Science Department be created and that Professor Beverly Lundberg be designated Acting Head. In July 1982, Professor Lundberg resigned as Acting Head, and Dr. Virgil Ellerbruch became the new Acting Head of Computer Science.

A proposal to offer a Bachelor's Degree in Computer Science was submitted to and approved by the Board of Regents in 1983. At the time of approval, two restrictions were made by the Board of Regents. The first restriction was that no more than 35 students could receive the degree in any one year. The second restriction was that students had to have a 2.75 grade point average when they applied for admission into the program after having completed 30 or more credits. (These two restrictions are no longer in effect.)

Dr. Gerald E. Bergum became Acting Head in August 1985 and permanent Head in August 1987. Another milestone for Computer Science at SDSU was the addition of a graduate program in 1991. Dr. Bergum retired in June 2000, and Dr. Lewis Brown became the Acting Head until July 1, 2001, when Dr. Ali Salehnia was appointed as the Acting Head.

On July 1, 2003, the Departments of Electrical Engineering and Computer Science were merged, in concert with the creation of a new software engineering program. All three programs comprised the Electrical Engineering and Computer Science Department. With the creation of the new department, Dr. Dennis Helder assumed the position of Department Head. In 2010, Dr. Steven Hietpas assumed the position of Department Head. In 2011, due to State budget cuts, the Software Engineering program was discontinued, leaving the department with two programs: EE and CS.
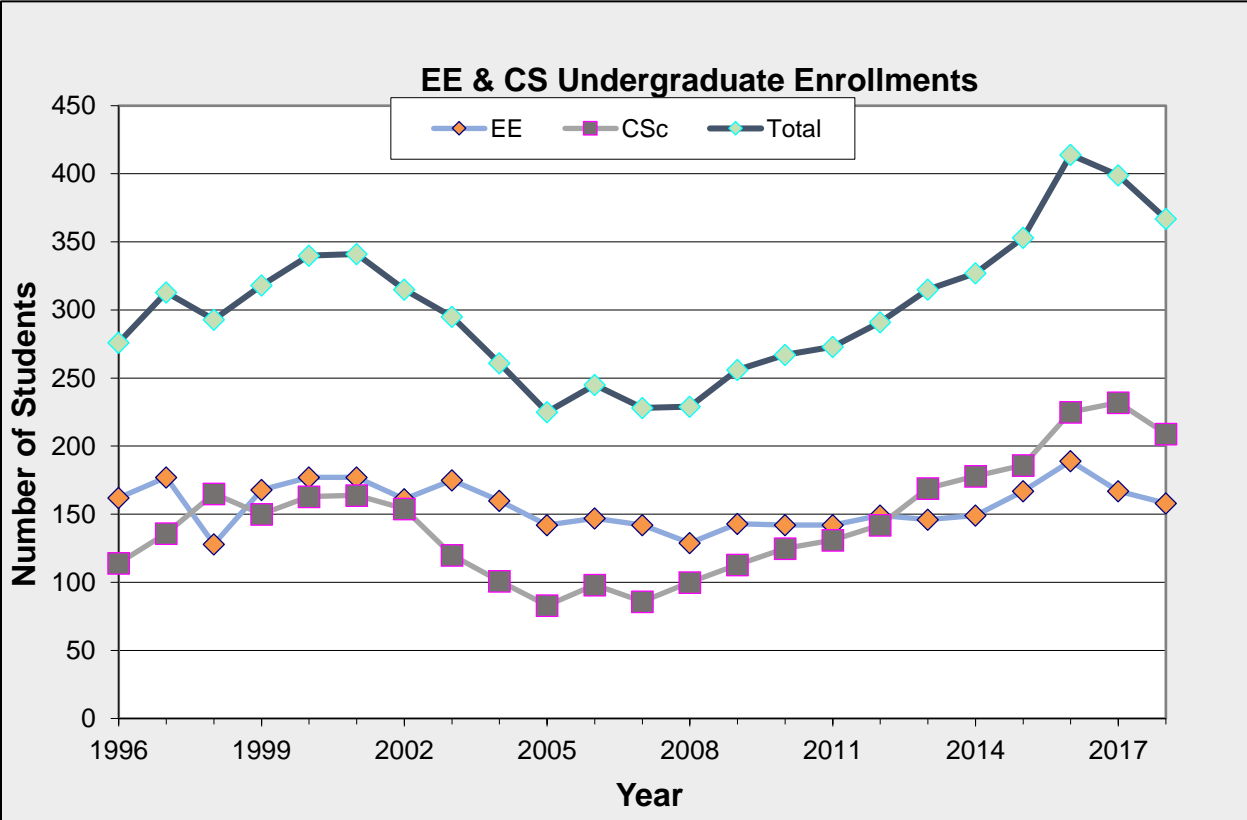
As of June 21, 2018, Dr. Steve Hietpas stepped down as Department Head and returned to the EE faculty full-time. On June 22nd, Dr. George Hamer assumed the role of Acting Department Head in addition to his duties as Assistant Head.

Beginning June 22, 2020, Dr. Siddarth Suryanarayanan from Colorado State University will be the new EECS department head. He is an accomplished researcher, and we are excited for the insight and experience he will bring to SDSU in Power Systems and Cloud Computing. We are looking for the vision and new ideas he will bring for curriculum and research, as well as for collaboration and convergence with other disciplines. Dr. Suryanarayanan has had a distinguished academic career since receiving his PhD from Arizona State University in 2004

focusing on electric power systems. In addition to his studies and research work at Arizona State University he has held academic appointments at Florida State University, Colorado School of Mines, and most recently at Colorado State University since 2010. Dr. Suryanarayanan has progressed through the tenure track ranks of professorship and has had a distinguished career as a professor and researcher. His external research funding, awards and scholarly presentations attest to his recognition as a national and international scholar as do his international appointments in Greece, Argentina, and France. He has been recognized by IEEE multiple times for accomplishments in his career.

Dr. George Hamer will be returning to his role as Assistant Department Head beginning June 22, 2020.

Undergraduate Enrollment History

Graduate Enrollments