COORDINATING COMMISSION
FOR POSTSECONDARY EDUCATION

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PROPOSAL FOR NEW INSTRUCTIONAL PROGRAM

Form 92-40

Institution Submitting Proposal:	Southeast Community College
Title of Program:	Data Science
CIP Code	30.7101
SOC Code	15-2041, 15-2051, 43-9111
Organizational Unit in which Program will be located:	Arts & Sciences Division
Name of Contact Person in the event additional information is needed:	Bev Cummins, Vice President of Program Development and Lincoln Campus Director
Telephone:	402-437-2554
Degree, Diploma, or Certificate to be offered	Associate of Science
Proposal date to initiate program:	August, 2025
List the location(s) where this program will be offered:	Lincoln, Online
If the program has a projected ending date, please so indicate:	N/A
Date Approved by Governing Board:	

Chief Executive Officer's or other Authorized Officer's signature: Bev Cummins

I. Purpose and Description of the Data Science Program

Southeast Community College (SCC) proposes to establish an Associate of Science degree in Data Science. Data science is the study of data to extract meaningful insights for business. The Associate of Science in Data Science provides students with a foundational understanding of data analysis, statistical modeling, and computational techniques used to extract insights from large datasets. This program is designed to equip students with the knowledge and skills necessary to pursue careers in the rapidly growing field of data science. Through a combination of theoretical coursework and hands-on practical experience, students will learn how to collect, clean, analyze, and interpret data to inform decision-making processes across various industries such as banking, finance, insurance, media and entertainment, and healthcare.

The program covers a range of topics including statistical analysis, programming languages such as Python and R, data visualization, machine learning, and database management. Students will gain proficiency in using analytical tools and software commonly employed in data science practice. Our curriculum is structured to provide a solid foundation in mathematics, statistics, and computer science, while incorporating real-world case studies and projects to reinforce learning outcomes. Additionally, students will have the opportunity to work on collaborative projects with local businesses and organizations to gain practical experience and build professional networks.

This program would appeal to a wide range of individuals, from those looking to change careers and transition to a more in-demand field to recent high school graduates pursuing a technology-related field. As this field continues to emerge, working professionals may seek to upskill their current roles and need more formal training and education in data science. Additionally, theoretically trained college and university students may wish to transfer to a program to attain hands-on experience.

Upon completion of the program, graduates will be prepared for entry-level positions in data analysis, business intelligence, market research, and other related fields. Furthermore, the program lays a strong foundation for students who wish to pursue further education in data science or related disciplines at the bachelor's level or beyond. All the courses listed in the curriculum plan are transferrable to UNL who have stated our Data Science program “looks like an excellent fit” for their Data Science program and students would be able to “transfer into either the College of Arts and Sciences or the College of Engineering” to complete a four-year degree. We are also working with UNO and UNK to finalize a similar pathway. Program delivery includes hands-on instruction and online delivery on all SCC Campuses. As shown in the curriculum plan below, the A.S. in Data Science includes mathematics, statistics, and computer programming, the bulk of which are already existing courses at SCC that will be used to develop a pathway to the A.S. in Data Science.

Course Number	Course Name	Credit Hours	New or Existing Course?
ACFS 1015	Success@SCC	1.0	Existing
Math/Computer Science Core Classes			
CSCI 1550	Computer Science I	4.0	Existing
CSCI 2311	Data Structures and Algorithms for Informatics	3.0	NEW
INFO 2578	Data Analysis using Python	3.0	Existing

MATH 1300	Pre-Calculus	5.0	Existing
MATH 1600	Calculus I	5.0	Existing
MATH1700	Calculus II	5.0	Existing
MATH 2170	Applied Statistics	3.0	Existing
MATH 2270	Statistics II	3.0	NEW
MATH 2314	Linear Algebra	3.0	NEW
	Total Math & Computer Science Core	**34.0**	
Written Communications			
ENGL 1010 ENGL 1010H ENGL 1054	Choose 1 of the following: English Composition I (Recommended) Composition I Honors Writing and Communities	3.0	Existing
ENGL 1020 ENGL 1020H ENGL 2560 OFFT 2120	Choose 1 of the following: English Composition II Composition II Honors Technical Writing (Recommended) Business Communication Strategies	3.0	Existing
Speech Communications			
COMM 1090 COMM 1110 SPCH 1110 COMM 2100 COMM 2810	Choose 1 of the following: Fundamentals of Human Communication Public Speaking Public Speaking Communicating in Groups and Teams Business and Professional Communication	3.0	Existing
Natural Science With Lab			
BIOS 1010 BIOS 1090 BIOS 1120 BIOS 1140 BIOS 1400 BIOS 1410 BIOS 2130 BIOS 2200 BIOS 2250 BIOS 2260 BIOS 2410 BIOS 2460 BIOT 1400 BIOT 2400 CHEM 1050 CHEM 1090 CHEM 1100 GEOG 1500 GEOG 1010 PHYS 1030 PHYS 1100 PHYS1150 PHYS 1410 PHYS 1420 PHYS 2110 PHYS 2120	Choose 2 of the following: General Biology I (Recommended) Plant Biology Introduction to Zoology Human Anatomy Biology I (Recommended) Biology II Human Physiology Principles of Ecology Human Anatomy & Physiology I Human Anatomy & Physiology II General Genetics Microbiology Introduction to Biotechnology I Introduction to Biotechnology II Chemistry and the Citizen General Chemistry I (Recommended) General Chemistry II Physical Geography Physical Geology Astronomy Physical Science Descriptive Physics Elementary General Physics I (Recommended) Elementary General Physics II General Physics I General Physics II	Minimum of 8	Existing
Humanities			
ARTS 1010 ARTS 1050 ARTS 1060 ARTS 1110 ARTS 1210 ARTS 1330 ARTS 2510 ARTS 2650 ARTS2750 ARTS 2850 COMM 2050	Choose 1 of the following: Introduction to the Visual Arts Introduction to Art History & Criticism I Introduction to Art History & Criticism II Beginning Drawing I 2-Dimensional Design Beginning Ceramics I Beginning Painting I Introduction to Native American Art Women in Art History of Photography Oral Performance of Literature	3.0	Existing

COMM 2100	Communicating in Groups and Teams		
COMM 2750	Political Communication		
ENGL 2050	Modern Fiction		
ENGL 2100	Intro to Literature		
ENGL 2140	Intro to Shakespeare		
ENGL 2150	Intro to Women's Literature		
ENGL 2160	Children's Literature		
ENGL 2200	Science Fiction Literature		
ENGL 2210	American Literature from 1865		
ENGL 2220	British Literature		
ENGL 2440	African American Literature		
ENGL 2450	Native American Literature		
ENGL 2460	Latinx American Literature		
ENGL 2470	Asian American Literature		
ENGL 2520	Fiction Writing		
ENGL 2530	Poetry Writing		
HIST 1000	Western Tradition to 1500		
HIST 1010	Western Tradition since 1500		
HIST 2010	American History I		
HIST 2020	American History II		
HIST 2100	World History to 1500 CE		
HIST 2110	World History since 1500 CE		
HIST 2604	World War II		
HIST 2960	Survey of African American History		
HUMS 1100	Introduction to Humanities		
HUMS 1200	Contemporary Arts & Ideas		
JOUR 1810	Introduction to Mass Media		
JOUR 1820	Media Writing		
MUSC 1010	Intro to Music (Music Appreciation)		
MUSC 1610	Music Theory I		
MUSC 2750	Introduction to American Music		
MUSC 2800	Introduction to World Music		
MUSC 2870	History of Rock Music		
PHIL 1010	Intro to Philosophy		
PHIL 1060	Applied Ethics		
PHIL 1100	Intro to Logic and Critical Thinking		
PHIL 2110	Intro to Modern Logic		
PHIL 2130	Bioethics		
PHIL 2250	Environmental Ethics		
PHIL 2610	Comparative Religions		
PHIL 2650	Philosophy of Religion		
PHOT 1750	Beginning Photography		
PHOT 1760	Digital Photography and Creative Imaging		
THEA 1010	Introduction to Theater		
THEA 1140	Basic Acting		
THEA 2310	Film Appreciation		
Social/Behavioral Science			
	<u>Choose 1 of the following:</u>		
ANTH 1020	Introduction to Cultural Anthropology		
ANTH 1120	General Anthropology		
BIOS 2210	Animal Behavior		
COMM 2750 OR POLS 2750	Political Communication		
ECON 1200	Personal Finance		
ECON 2110	Principals of Macroeconomics (recommended)		
ECON 2120	Principals of Microeconomics (recommended)		
EDUC 1110	Introduction to Professional Education		
EDUC 2000	Educational Psychology	3.0	Existing
EDUC 2160	Children's Literature		
EDUC 2300	Introduction to Special Education		
EDUC 2590	Instructional Technology		
EDUC 2800	Professional Practicum		
GEOG 1000	Exploring Our World: Fundamentals of Geospatial Science		
GEOG 1020	World Regional Geography		
GEOG 1400	Human Geography		
GEOG2810	Introduction to Water Science		
PHED 1000	Lifetime Wellness		

POLS 1000	American Government		
POLS 1040	Comparative Politics		
POLS 1080	Introduction to Political Science		
POLS 1600	International Relations		
PSYC 1250	Interpersonal Relations		
PSYC 1810	Intro to Psychology		
PSYC 2210	Animal Behavior		
PSYC 2880	Social Psychology		
PSYC 2960	Lifespan Human Development		
SOCI 1010	Intro to Sociology		
SOCI 1020	Diversity in Society		
SOCI 2000	Gender in Contemporary Society		
SOCI 2010	Social Problems		
SOCI 2150	Issues of Unity and Diversity		
SOCI 2250	Marriage and the Family		
Culture & Gender Studies			
	Choose 1 of the following:	3.0	Existing
ANTH 1020	Introduction to Cultural Anthropology		
ANTH 1120	General Anthropology		
ARTS 2650	Native American Art		
ARTS 2750	Women in Art		
COMM 2110	Intercultural Communication		
ENGL 2150	Introduction to Women's Literature		
ENGL 2440	African American Literature		
ENGL 2450	Native American Literature		
ENGL 2460	Latinx Literature		
ENGL 2470	Asian American Literature		
EDUC 2300	Introduction to Special Education		
GEOG 1400	Human Geography		
GEOG 1020	World Regional Geography		
GLST 2980	Global Studies		
HIST 2100	World History to 1500 CE		
HIST 2110	World History since 1500 CE		
HIST 2960	Survey of African American History		
HMRS 1320	Multicultural Competency		
MUSC 2800	Introduction to World Music		
PHIL2610/RELS2610	Comparative Religion		
POLS 1600	International Relations		
SOCI 1020	Diversity in Society		
SOCI 2000	Women in Contemporary Society		
SOCI 2010	Social Problems		
SOCI 2150	Issues of Unity and Diversity		
	Total General Education Core	**26.0**	
	Total Credit Hours	**61.0**	

The program learning outcomes for the A.S. in Data Science are as follows:

- Collect, clean, and manipulate datasets using appropriate tools and techniques, demonstrating proficiency in exploratory data analysis and fundamental statistical concepts and techniques, including hypothesis testing, regression analysis, and inferential statistics, and apply them to real-world problems.
- Demonstrate proficiency in programming languages commonly used in data science, such as Python and R, and will be able to write code to perform data manipulation, visualization, and modeling tasks
- Create effective data visualizations using tools such as matplotlib, seaborn, PowerBI, tableau, and ggplot2 to communicate insights and findings from data analysis clearly.
- Apply the principles underlying machine learning algorithms and use data science techniques to build predictive models and uncover patterns in data.

II. Review Criteria

A. CENTRALITY TO ROLE AND MISSION

The mission of Southeast Community College is *to empower and transform the diverse learners and communities of southeast Nebraska through accessible lifelong educational opportunities. The College provides dynamic and responsive pathways to career and technical, academic transfer, and continuing education programs that contribute to personal, community, and workforce development*.

The creation of an A.S. in Data Science aligns with SCC's mission to provide accessible and responsive pathways for students to attain a credential that best serves the employment pathway they determine. This Associate of Science degree will appeal to high school graduates as well as adult learners seeking to reskill or upskill in the industry. It will appeal to learners looking to obtain the first years of a four-year degree at a lower cost of attendance.

B. EVIDENCE OF NEED AND DEMAND

Workforce Need. According to *Lightcast Q2 2024 Data Set*, (www.economicmodeling.com), a company used by SCC to provide academic program evaluation data, there were **2,959 unique job postings** in data science-related jobs across SCC's service area between January 2020 to May, 2024.

According to the U.S. Bureau of Labor Statistics (BLS), the field of data science is experiencing significant growth. Employment of data scientists is projected to increase by **36% from 2023 to 2033**, which is much faster than the average for all occupations. This rapid growth is expected to result in approximately **20,800 job openings each year** across the nation over the coming decade. The increase in demand is driven by the growing importance of data in decision-making across industries such as technology, healthcare, finance, and scientific research (Bureau of Labor Statistics). By offering this program on the Lincoln campus and online, we can provide opportunities for students across the service area and nation to attain the first two years in Data Science for either entry into the workforce or continued education.

In addition to strong growth, data scientists also command competitive salaries, with a **median annual wage of $108,020** as of 2023 for bachelor's degree graduates. This indicates a lucrative field with robust opportunities, making it an attractive career path for individuals with skills in data analysis, machine learning, and programming (Bureau of Labor Statistics). This positive outlook suggests that the demand for data science professionals will continue to rise, especially as industries increasingly rely on big data and analytics to drive innovation and efficiency.

Student Demand. According to Gray Associates, the Google search volume for data science is "exceptionally high" and in the 98th percentile of searches with over 4,000 keyword searches for data science careers in just three months in a 120-mile radius of SCC. Enrollment in Data Science programs nationally has increased, with a 73% year-over-year percentage increase as indicated in the chart below. Additionally, online completions in this program of study are extremely high nationally as compared to a lower rate in Nebraska, which may indicate an unmet need for online education within this market. Currently there are no associate degree programs in Nebraska, indicating an opportunity to provide the first two years of a four-year degree program at a lower cost. All courses transfer to UNL and SCC has been in contact with additional four-year institutions to finalize course transfers for students wishing to continue their education with other colleges.

Student Demand
Score: 21 Percentile: 96

Category	Pctl	Criterion	Value	Score
Size	98	Google Search Volume (3 Months)*	4,398	8
	94	International Page Views (12 Months)	1,078	NS
	91	New Student Enrollment Volume (12 Mo.)	39	4
	79	On-ground Completions at In-Market Institutions	6	0
	0	Online Completions by In-Market Students	0	0
	78	Sum of On-ground and Online Completions	6	0
Growth	81	Google Search YoY Change (Units)*	-7	0
	96	New Student Enrollment Vol. YoY Change (Units)	16	2
	93	Completion Volume YoY Change (Units)	5	1
	90	Google Search YoY Change (%)*	-0%	2
	85	New Student Enrollment Vol. YoY Change (%)	73%	2
	98	Completion Volume YoY Change (%)	519%	2

Competitive Intensity
Score: 8 Percentile: 88

Category	Pctl	Criterion	Value	Score
Volume of In-Market Competition	84	Campuses with Graduates**	1	4
	95	Campuses with Grads YoY Change (Units)**	0	NS
	0	Institutions with Online In-Market Students**	0	0
In-Market Program Sizes	36	Average Program Completions	6	0
	47	Median Program Completions	6	0
	91	YoY Median Prog. Compl. Change (Units)	5	1
	99	YoY Median Prog. Compl. Change (%)	5	2
In-Market Saturation	84	Google Search * Cost per Click**	$11	1
	85	Google Competition Index**	0.49	0
National Online Competition	88	National Online Institutions (Units)**	16	NS
	63	Nat'l Online % of Institutions	6%	NS
	55	Nat'l Online % of Completions	3%	NS

By offering an A.S. in Data Science, SCC would afford a specialized degree that provides entry-level access to the workforce as well as the first two years of a four-year degree. Our research of job posting websites indicates there are an increasing number of companies (e.g. Sandhills Global, Sephora, simulation/sports modeling, healthcare, LMI, etc.) who will accept any degree or experience using computer software programs like R, Python, SQL, Tableau, etc.

ADEQUACY OF RESOURCES

1. **Faculty and Staff Resources**
   The Arts and Sciences Division will provide support staffing and administrative oversight. All but three of the courses in the curriculum plan exist in SCC's current course offerings. The three

new courses are already under development and will be delivered by the current full-time or adjunct faculty. To begin the program, we will not need additional instructors or additional sections of current courses, however, if the program grows as we anticipate it ight, there may be a need to increase the number of adjunct instructors to meet demand. We have identified a current faculty member to teach and serve as Program Chair, requiring an annual $3,000 stipend for those duties, (included in the budget projections). We anticipate current College and Program Advisors can provide sufficient student advising for the program.

Courses will be offered throughout the academic year, and we will continue to enroll students every semester until course and section demand indicates additional needs. It is difficult to predict if there will be an impact on enrollment at this time. We anticipate an initial enrollment of 10 students with a general annual growth of 5-10 students as the program grows and interest develops. The minimum number of students to make the program viable is 8.

2. **Physical Facilities and Instructional Equipment**
   Southeast Community College graduates approximately 70 students from its IT programs each year. However, the demand for IT professionals in Nebraska far exceeds what the College can supply.

   The new Sandhills Global Technology Center on SCC's Lincoln Campus opening in January 2025 will include specialized lab spaces and room for program growth, along with dynamic and innovative technologies. The Center will allow programs with space deficiencies to expand the number of graduates, while creating opportunities for asymmetrical programming, including short-term programming, expedited retraining, and customized training to meet Nebraska's workforce needs. The new A.S. in Data Science program will be housed in the Sandhills Global Technology Center and provide students access to state-of-the-art learning spaces in computer science.

   Additionally, Sandhills Global is recruiting students for their internship program. With their worldwide headquarters based out of Lincoln there are a lot of opportunities for students to obtain employment. Sandhills Global, just one of many technology-related companies in SCC's 15-county service area, hired nearly 400 employees in 2023. Per their email, "Sandhills internships are a great opportunity to apply the knowledge students are learning in class, in a professional business setting. Our internships are paid between $18 - $25/hour; and offer opportunities to work with new technologies, travel domestically and even internationally with flexible scheduling around school and long-term career advancement potential." As previously mentioned, the A.S. in Data Science program includes opportunities for students to work on collaborative projects with local businesses and organizations to gain practical experience and build professional networks.

   Instructional Equipment and Informational Resources
   Sufficient equipment, hardware, and software are in place at all campus locations. For computer science courses, the class will need to be held in a computer classroom. Many

computer programming platforms offer free access for students, but as the program is developed, we anticipate there may be a need for additional computer software.

Sufficient library staff, library resources and information technology resources are in place at all campus locations to support the students and program.

3. **Budget Projections**
   Initial costs for the A.S. in Data Science program are minimal and include funds for adjunct instruction, a program chair stipend, and computer software. The tuition rates are projections based on past trends as no rates have been set by the SCC Board of Governors for the 2024-2025 academic year. Salary increases are projections based on past trends of a 3% total compensation increase. Please see the Revenue and Expense Projections.

C. AVOIDANCE OF UNNECESSARY DUPLICATION

No other community college in the state offers an Associate Degree in Data Science. Metropolitan Community College offers a certificate program but several of their higher-level data science classes are only offered one time per year. We believe there is no unnecessary duplication.

D. CONSISTENCY WITH THE COMPREHENSIVE STATEWIDE PLAN FOR POSTSECONDARY EDUCATION

The proposed A.S. in Data Science is consistent with Nebraska's Comprehensive Statewide Plan for Postsecondary Education. The program will provide education "...that prepares students for productive and fulfilling lives..." and "...enhances workforce development..." Specifically, the Comprehensive Statewide Plan directs institutions to "provide specialized certification programs in professional, technical, and vocational fields that address regional and state needs" (p. 3-3). Given the current demand for data science detailed previously, SCC's proposed A.S. in Data Science is consistent with this goal.

Revenue-Expense Projections

TABLE 1: PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM

	(FY2025-2026) Year 1		(FY2026-27) Year 2		(FY2027-28) Year 3		(FY2028-29) Year 4		(FY2029-2030) Year 5		**Total**	
Personnel	**FTE**	Cost	FTE	Cost	FTE	Cost	FTE	Cost	FTE	Cost	**FTE**	**Cost**
Faculty*	0	0	.5 adjunct	$23,400	.5 adjunct	$24,000	1.0 adjunct	$49,200	1.0 adjunct	$50,400	1.0 adjunct	147,000
Professional	0	0	0	0	0	0	0	0	0	0	0	0
Graduate assistants	0	0	0	0	0	0	0	0	0	0	0	0
Support staff	0	0	0	0	0	0	0	0	0	0	0	0
Subtotal	0	0	.5	$23,400	.5	$24,000	1	$49,200	1	$50,400	1	147,000
Operating												
General Operating		$10,000		$10,000		$12,000		$12,000		$14,000		$50,000
Equipment		$4,000		$4,000		$4,000		$4,000		$4,000		$20,000
New or renovated space		0		0		0		0		0		0
Library/Information Resources		0		0		0		0		0		0
Other (Stipend)		$3,000		$3,000		$3,000		$3,000		$3,000		$15,000
Subtotal		$17,000		$17,000		$19,000		$19,000		$21,000		$65,000
Total Expenses		**$17,000**		**$40,400**		**$43,000**		**$68,200**		**$71,400**		**$212,000**

* Funds for additional adjunct instructors estimates 3% annual increase.

TABLE 2: REVENUE SOURCES FOR PROJECTED EXPENSES - NEW INSTRUCTIONAL PROGRAM

	(FY2025-2026) Year 1	(FY2026-27) Year 2	(FY2027-28) Year 3	(FY2028-29) Year 4	(FY2029-2030) Year 5	**Total**
Reallocation of Existing Funds	0	0	0	0	0	$0
Required New Public Funds	0	0	0	0	0	$0
State Funds/Local Tax	0	0	0	0	0	$0
Tuition and Fees *	30CH x 10students x $127 = $38,100	30CH x 20 x $130 = $78,000	30CH x 25 x $134 = $100,500	30CH x 30 x $138 = $124,200	30CH x 30 x $142 = $127,800	**$486,600**
Other Funding						
Total Revenue	**$38,100**	**$78,000**	**$100,500**	**$124,200**	**$127,800**	**$486,600**

* Determined by # of credit hours x # students x tuition & fees with a 3% estimated increase of prior year.