ELEMENTARY/SECONDARY COMPUTER SCIENCE ENDORSEMENT

SOUTH DAKOTA STATE UNIVERSITY

Endorsement coursework requirements must include courses from each Strand totaling 13 or more credits

Strand 1	**Educational technology methodology course**
Strand 2	**Demonstrated knowledge of basic computer technologies and networking concepts, terminology tools, and applications**
Strand 3	**Study of designing, operating, and maintaining computer technologies and networking systems**
Strand 4	**Development of skills with current productivity and multimedia tools for education**
Strand 5	**Demonstrated competencies with integrating educational technology to support teaching and learning**
Strand 6	**Study of equity and ethics associated with the use of educational technology in schools**

Courses Meeting the Requirement	CSC 100L (1 Credit)	CSC 105 (3 Credits)	CSC 150 (3 Credits)	CSC 244/L (4 Credits)	CSC 250 (3 Credits)	CSC 300 (3 Credits)	CSC 314 (3 Credits)	CSC 354 (3 Credits)	EDFN 365 (2 Credits)
Strand 1									
Strand 2	X	X	X		X			X	
Strand 3				X		X	X		
Strand 4									
Strand 5									X
Strand 6									

Total Required Credits: 13

May 2020

Course Number	Course Name	University Course Description	Method	Sessions Offered	Total Credits
CSC 100L	**Intro to Computer Science Lab**	An introduction to the study of computer science using a hands-on robotics approach in a lab setting.	Face to Face	Fall	1
CSC 150	**Computer Science I**	An introduction to computer programming. Focus on problem solving, algorithm development, design, and programming concepts	Face to Face	Fall, Spring	3
CSC 250	**Computer Science II**	Problem solving, algorithm design, standards of program style, debugging and testing. Extension of the control structures and data structures of the high-level language introduced in CSC 150. Elementary data structures and basic algorithms that include sorting and searching. Topics include more advanced treatment of functions, data types such as arrays and structures, and files.	Face to Face	Fall, Spring, Summer	3
CSC 244/L	**Digital logic and lab**	The fundamental concepts of analysis and design of digital circuits including combinational and sequential logic using hardware and software tools. Laboratory topics which enhance the concepts of the lecture course	Face to Face	Fall	4
CSC 300	**Data Structures**	A systematic study of data structures and the accompanying algorithms used in computing problems; structure and use of storage; methods of representing data; techniques for implementing data structures; linear lists; stacks; queue; trees and tree traversal; linked lists; and other structures.	Face to Face	Fall	3
CSC 314	**Assembly Language**	A thorough introduction to assembly language programming and processor architecture. A study of low-level programming techniques, and the layout of a typical computer. The student will gain insight into the memory layout, registers run-time stack, and global data segment of a running program.	Face to Face	Fall	3
CSC 354	**Introduction to Systems Programming**	The study of macros, subroutines, subroutine linkage, conditional assembly, input-output, interrupt processing, assemblers, loaders and linkers	Face to Face	Fall	3
EDFN 365	**Computer-Based Technology and Learning**	Prepares students to integrate computers into the curriculum by exploring the evolving uses and expectations of technology as a teaching and learning tool. Course objectives based on ISTE standards.	Internet	Summer	2
CSC 105	**Introduction to Computers**	Overview of computer applications with emphasis on word processing, spreadsheets, database, presentation tools and internet-based applications.	Face to Face	Fall	3