SOUTH DAKOTA BOARD OF REGENTS
ACADEMIC AFFAIRS FORMS
Substantive Program Modification Program

UNIVERSITY:	**University of South Dakota**
CURRENT PROGRAM TITLE:	**Computer Science, M.S. (Plan A and Plan B) with optional specializations: Informatics and Human-Computer Interaction) plus Accelerated Track [U.MS.CSCI; U.MS.CSCI-ACC, U.MS.CSCI-HCIN; U.MS.CSCI-INFM]**
CIP CODE:	**11.0101**
UNIVERSITY DEPARTMENT:	**Computer Science**
UNIVERSITY DIVISION:	**Arts & Sciences**

University Approval

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

Elizabeth M. Freeburg — 1/18/2018

Vice President of Academic Affairs or President of the University — Date

1. This modification addresses a change in (*place an "X" in the appropriate box*):

[ ]	Total credits required within the discipline	[ ]	Total credits of supportive course work
[ ]	Total credits of elective course work	[ ]	Total credits required for program
[ ]	Program name	[X]	Existing specialization
[ ]	CIP Code	[ ]	Other (explain below)

2. Effective date of change: 2018-2019 catalog

3. Program Degree Level (*place an "X" in the appropriate box*):

Associate [ ] Bachelor's [ ] Master's [X] Doctoral [ ]

4. Category (*place an "X" in the appropriate box*):

Certificate [ ] Specialization [X] Minor [ ] Major [X]

5. If a name change is proposed, the change will occur (*place an "X" in the appropriate box*):

[X] On the effective date for all students

[ ] On the effective date for students new to the program (enrolled students will graduate from existing program)

Proposed new name: _____

Reminder: Name changes impact require updating any related articulation agreements, site approvals, etc.

6. Primary Aspects of the Modification (*add lines as needed*):

Existing Curriculum				*Proposed Curriculum (highlight changes)*			
Pref.	**Num.**	**Title**	**Cr. Hrs.**	**Pref.**	**Num.**	**Title**	**Cr. Hrs.**
Master of Science, Computer Science Plan A (thesis): Total 30 credit hours*				**Master of Science, Computer Science Plan A (thesis): Total 30 credit hours**			
Major Area Core Coursework				Major Area Core Coursework			
CSC	798	THESIS	6	CSC	798	THESIS	6
Select 18 credit hours from the following core courses:				**Select 18 credit hours from the following core courses:**			
CSC	705	DESIGN AND ANALYSIS OF COMPUTER ALGORITHMS	3	CSC	705	DESIGN AND ANALYSIS OF COMPUTER ALGORITHMS	3
CSC	721	DISTRIBUTED SYSTEMS	3	CSC	721	DISTRIBUTED SYSTEMS	3
CSC	725	OPERATING SYSTEMS & ARCHITECTURE	3	CSC	725	OPERATING SYSTEMS & ARCHITECTURE	3
CSC	731	COMPILER CONSTRUCTION	3	CSC	731	COMPILER CONSTRUCTION	3
CSC	762	ADVANCED COMPUTER NETWORKS AND SECURITY	3	CSC	762	ADVANCED COMPUTER NETWORKS AND SECURITY	3
CSC	765	SOFTWARE DESIGN AND DEVELOPMENT	3	CSC	765	SOFTWARE DESIGN AND DEVELOPMENT	3
CSC	785	INFORMATION STORAGE AND RETRIEVAL	3	CSC	785	INFORMATION STORAGE AND RETRIEVAL	3
CSC	790	GRADUATE SEMINAR	3	CSC	790	GRADUATE SEMINAR	3
Select 6 hours of electives, Informatics Specialization (15 hours), or Human-Computer Interaction Specialization (21 hours) from below list.			6	Select 6 hours of electives or Informatics Specialization (15 hours), ~~or Human-Computer Interaction Specialization (21 hours)~~ from below list.			6
		Subtotal:	**30**			**Subtotal:**	**30**
Master of Science, Computer Science Plan B (non–thesis): Total 33 credit hours*				**Master of Science, Computer Science Plan B (non–thesis): Total 33 credit hours**			
Major Area Core Coursework				**Major Area Core Coursework**			
Select 18 credit hours from the following core courses:				**Select 18 credit hours from the following core courses:**			
CSC	705	DESIGN AND ANALYSIS OF COMPUTER ALGORITHMS	3	CSC	705	DESIGN AND ANALYSIS OF COMPUTER ALGORITHMS	3
CSC	721	DISTRIBUTED SYSTEMS	3	CSC	721	DISTRIBUTED SYSTEMS	3
CSC	725	OPERATING SYSTEMS & ARCHITECTURE	3	CSC	725	OPERATING SYSTEMS & ARCHITECTURE	3
CSC	731	COMPILER CONSTRUCTION	3	CSC	731	COMPILER CONSTRUCTION	3
CSC	762	ADVANCED COMPUTER NETWORKS AND SECURITY	3	CSC	762	ADVANCED COMPUTER NETWORKS AND SECURITY	3
CSC	765	SOFTWARE DESIGN AND DEVELOPMENT	3	CSC	765	SOFTWARE DESIGN AND DEVELOPMENT	3
CSC	785	INFORMATION STORAGE AND RETRIEVAL	3	CSC	785	INFORMATION STORAGE AND RETRIEVAL	3
CSC	790	GRADUATE SEMINAR	3	CSC	790	GRADUATE SEMINAR	3
Select 15 hours of electives or Informatics Specialization			15	Select 15 hours of electives or Informatics Specialization			15
		Subtotal:	**33**			**Subtotal:**	**33**
Elective Work: Plan A takes 6 credit hours, Plan B takes 15 credit hours from the following:				**Elective Work: Plan A takes 6 credit hours, Plan B takes 15 credit hours from the following:**			
CSC	511	SIMULATION	3	CSC	511	SIMULATION	3
CSC	524	DIGITAL ELECTRONICS & MICROPROCESSORS	3	CSC	524	DIGITAL ELECTRONICS & MICROPROCESSORS	3
CSC	525	HIGH PERFORMANCE COMPUTING	3	CSC	525	HIGH PERFORMANCE COMPUTING	3
CSC	533	COMPUTER GRAPHICS	3	CSC	533	COMPUTER GRAPHICS	3
CSC	535	HUMAN FACTORS IN COMPUTER SYSTEMS	3	CSC	535	HUMAN FACTORS IN COMPUTER SYSTEMS	3
CSC	545	INTRODUCTION TO THEORY OF COMPUTATION	3	CSC	545	INTRODUCTION TO THEORY OF COMPUTATION	3
CSC	547	ARTIFICIAL INTELLIGENCE	3	CSC	547	ARTIFICIAL INTELLIGENCE	3
CSC	556	OPERATING SYSTEMS	3	CSC	556	OPERATING SYSTEMS	3
CSC	561	PROGRAMMING LANGUAGES	3	CSC	561	PROGRAMMING LANGUAGES	3
CSC	570	SOFTWARE ENGINEERING	3	CSC	570	SOFTWARE ENGINEERING	3
CSC	571	NUMERICAL ANALYSIS I	3	CSC	571	NUMERICAL ANALYSIS I	3

CSC	572	NUMERICAL ANALYSIS II	3	CSC	572	NUMERICAL ANALYSIS II	3
CSC	575	OPERATIONS RESEARCH	3	CSC	575	OPERATIONS RESEARCH	3
CSC	581	SYSTEMS ANALYSIS	3	CSC	581	SYSTEMS ANALYSIS	3
CSC	584	ATABASE MANAGEMENT SYSTEMS	3	CSC	584	ATABASE MANAGEMENT SYSTEMS	3
CSC 5XX, 6XX, or 7XX-Graduate coursework in Computer Science with the department's approval				CSC 5XX, 6XX, or 7XX-Graduate coursework in Computer Science with the department's approval			
XXXX 5XX, 6XX, or 7XX-Graduate coursework in another discipline with the department's approval				XXXX 5XX, 6XX, or 7XX-Graduate coursework in another discipline with the department's approval			
Informatics Specialization optional (12 credit hours plus 3 credit hours specified in the core)				**Informatics Specialization optional (12 credit hours plus 3 credit hours specified in the core)**			
Core courses:				**Core courses:**			
CSC	525	High Performance Computing	3	CSC	525	High Performance Computing **OR**	
				CSC	6XX/7XX	Elective course with High Performance Computing content	3
CSC	586	Data Mining	3	CSC	586	Data Mining **OR**	
				CSC	6XX/7XX	Elective course with Advanced Data Mining	3
CSC	785	Information Storage and Retrieval	3	CSC	785	Information Storage and Retrieval **OR**	
				CSC	6XX/7XX	Elective course with Advanced Information Storage and Retrieval content	3
3 credit hours elective-Graduate coursework in Computer Science or in another discipline with the department's approval.				**3 credit hours elective-Graduate coursework in Computer Science or in another discipline with the department's approval.** **Select one course from the following:**			
CSC	601	Introduction to BioInformatics	3	CSC	601	Introduction to BioInformatics	
				CSC	6XX/7XX	Elective course with BioInformatics content	3
CPHD	601	Introduction to BioInformatics		CPHD	601	Introduction to BioInformatics	
Statistics course (3 credit hours):				**Statistics course (3 credit hours):**			
BIOL	520/L	Introduction to Biostatistics and computational biology	3/0	BIOL	520/L	Introduction to Biostatistics and computational biology	3/0
Other graduate-level statistics class approved by the Computer Science Department.			3	Other graduate-level statistics class approved by the Computer Science Department.			3
		Subtotal:	**15**			**Subtotal:**	**15**
Human-Computer Interaction Specialization optional (15 credit hours plus 6 credit hours specified in the core)				**Termination for this specialization has been submitted to delete the Human-Computer Interaction specialization.**			
Core courses							
CSC	535	Human Factors in computer systems	3				
CSC	735	Advanced Human Factors in computer systems	3				
CSC	742	Usability Testing	3				
PSYC	506	Cognitive Psychology	3				
Art or Design (6 credit hours)							
ART/ARTD 5xx/6xx/7xx-3 credit hours (Electives in Art, subject to approval of Computer Science department)				**REMOVE**			
MCOM	556	Multimedia Design & Development	3				
Statistics Course (3 credit hours)							
EDER	762	Foundations of Statistics	3				
PSYC	771	Research Design and Statistics	3				
Accelerated Program Master of Science, Computer Science: BS/MS*				**Accelerated Program Master of Science, Computer Science: BS/MS**			
Up to 9 credits applied toward the B.S. program may be used to satisfy graduate credits. The following restrictions apply:				**Up to 9 credits applied toward the B.S. program may be used to satisfy graduate credits. The following restrictions apply:**			

a. The courses must be taken at the 500/600 level as an undergraduate. Courses taken at the 500/600-level can be applied to both the B.S. and M.S. degrees. Dual-listed courses must be taken at the 500-level. b. The student must apply to, and be admitted to, the accelerated program prior to taking courses to be credited toward the accelerated program. c. No courses taken prior to admission to the accelerated program may be counted toward an accelerated graduate degree. No exceptions to this policy will be approved. d. Courses that are "double counted" must be approved by the department chair for inclusion in the program of study prior to registration for the course or the credits will not be applied toward the accelerated graduate degree. No exceptions to this policy will be approved. e. Only courses taken at the student's home institution are eligible for dual credit. No transferred courses from other institutions will be allowed to count toward the accelerated master's degree. f. To fulfill the undergraduate required courses, graduate courses on the same topic areas must be taken.	a. The courses must be taken at the 500/600 level as an undergraduate. Courses taken at the 500/600-level can be applied to both the B.S. and M.S. degrees. Dual-listed courses must be taken at the 500-level. b. The student must apply to, and be admitted to, the accelerated program prior to taking courses to be credited toward the accelerated program. c. No courses taken prior to admission to the accelerated program may be counted toward an accelerated graduate degree. No exceptions to this policy will be approved. d. Courses that are "double counted" must be approved by the department chair for inclusion in the program of study prior to registration for the course or the credits will not be applied toward the accelerated graduate degree. No exceptions to this policy will be approved. e. Only courses taken at the student's home institution are eligible for dual credit. No transferred courses from other institutions will be allowed to count toward the accelerated master's degree. f. To fulfill the undergraduate required courses, graduate courses on the same topic areas must be taken.

*** Note: No credit will be granted on the Program of Study for a core course with a grade of 'C' or lower.**

7. **Explanation of the Change:**

Informatics Specialization: As high performance computing and big data analysis, including data mining methods, have become new important trends in computer science, the Department of Computer Science at USD will offer more advanced courses at the 6XX/7XX level on these areas on a regular basis. To give the students in this **Informatics Specialization** the flexibility of taking more advanced courses, we allow students to count those advanced courses toward their specialization.

Human-Computer Interaction Specialization: The two faculty members who taught the three computer science core courses for this specialization have retired. Since our current faculty members are focusing on other areas of computer science, it is unrealistic to offer these specialized and unique courses on a regular basis under our current limited resources. Deletion of the specialization code will follow; no new students will be admitted.