

# EDUCATION, CURRICULUM AND INSTRUCTION: Ph.D. PROGRAM PLANNING FORM STEM COURSE REQUIREMENTS: EFFECTIVE FALL 2018 - SUMMER 2023 ADMITS

Name:	
Track:	
Adviser(s):	

**Preliminary Exam Committee:** Four faculty members - three (including the student's adviser) representing the major area and one representing the minor field (outside C&I) or supporting program (within or outside C&I).

Names of Major Examiners:	Names of Minor or Supporting Program Examiners:

### Core Coursework: (6 credits)

Course Designator	Course Title	Term/ Year	Semester Credits
CI 8131*	CI Core: Critical Examination of Curriculum in Context		3
CI 8132*	CI Core: Teaching Theory and Research		3
	Credit Sub-Total		6

### **STEM Core Coursework: (9 credits)**

Course Designator	Course Title	Term/ Year	Semester Credits
CI 8571*	Issues of Equity, Policy, and Social Justice in STEM Education		3
CI 8572*	Learning Theory and Classical Research in STEM Education		3
CI 8573*	Nature of Inquiry in STEM Education		3
	Credit Sub-Total		9

### Science Education Focus: (9 credits) Required course is listed; 6 additional "Science" focused credits are required

Course Designator	Course Title	Term/ Year	Semester Credits
CI 8574*	History and Philosophy of Science in Education		3

Mathematics Education Focus: (9 credits)				
Course Designator	Course Title	Term/ Year	Semester Credits	
	Credit Sub-Total			

Credit Sub-Total

### **Engineering Education Focus: (9 credits)**

Course Designator	Course Title	Term/ Year	Semester Credits
	Credit Sub-Total		

## Agricultural Education Focus: (9 credits) One additional "AECM" course at 3 credits is required to fulfill requirements

Course Designator	Course Title	Term/ Year	Semester Credits
AECM 8090*	Seminar: Agricultural Education and Extension		
AECM 8094*	Research in Agricultural Education and Extension		
	Credit Sub-Total		

**Research Methodology:** (15 credits) CI 8134 and CI 8135 must be taken the first Fall and Spring semester of program; a minimum of 6 credits (two semesters) of Statistics is required + 3 credits in a research elective

Course Designator	Course Title	Term/ Year	Semester Credits
CI 8134*	Foundations of Research in Curriculum and Instruction I		3
CI 8135*	Foundations of Research in Curriculum and Instruction II		3
	Statistics requirement		
	Statistics requirement		
	Three credits of additional advanced coursework in quantitative or qualitative methods in consultation with adviser		

	Credit Sub-Total		
Minor or Supp	orting Program: (12-15 credits)		
Course Designator	Course Title	Term/ Year	Semester Credits
Designator	Science Education Guidelines	ieiiii/ ieai	Credits
	12 credits. Minor or supporting field is done on a case-by-case basis in consultation with advisor.		
	Engineering Education Guidelines  12 credits. Minor or supporting field is done on a case-by-case basis in consultation with advisor.		
ſ	Mathematics Education Guidelines  Mathematics minor is determined by the Mathematics Department DGS and is usually 12-15 credits with one 5000 or 8000 sequence.		
	Supporting field in mathematics requires 12 credits at 5000 level determined in consultation with advisor.		
	Other options for supporting field sin mathematics education should be discussed with your adviser.		
	Agricultural Education Guidelines  12 credits. Minor or supporting field is done on a case-by-case basis in consultation with advisor.		
	Credit Sub-Total		
	Total of Course Credits (51 minimum)		
have completed a (cigs@umn.edu) Once a student re the form, then re coursework shou	Thesis Credits are required (CI 8888). Thesis credits are not graded. Students may start regis at least 36 course credits. Permission for early thesis credit registration is granted by the Grad after the student has submitted a draft of the STEM PhD Program Planning Form.  Registers for their last 51 credits of coursework – and this form is completely filled in – please had the signed form to the Graduate Studies Coordinator (125 Peik Hall or cigs@umn.edu). Plad be listed on this form as well – please note next to the course what institution the course is	uate Studies Co nave the faculty Please note: tra	oordinator adviser(s) sign nsfer
Signature of Adv	<u> </u>		
Signature of Adv	1951 (9).		