Department of Science, Technology, Engineering, and Mathematics (STEM) Education
Education Sciences Ph.D. - STEM Education Strand
Doctoral Program Plan and Curriculum Sheet

Name					
Email					
Address					
	Street		**City**	**State**	**Zip**
Phone					
	Home	**Work**	**Cell/Other**	**Semester of Admission to Doctoral Program**	

Professional Goals: Briefly describe the professional growth goals you hope to meet in pursuing the STEM Education Doctoral Degree.

Program Goals: In helping you develop your own professional goals, the STEM Strand of the Education Sciences Interdisciplinary Ph.D. program will focus on helping you:

1. Connect theory and practice through reflection, teaching, scholarship, and STEM educational action research.
2. Design authentic, innovative, project-based learning experiences that consider students of diverse backgrounds and perspectives.
3. Explore uses of appropriate assessments and technological tools to enhance STEM teaching and learning.
4. Develop communication skills through multiple forms of discourse and written, oral, and on-line narratives.
5. Explore and implement innovative and engaging curricula, especially around the Kentucky Core Academic Standards and College and Career Readiness.
6. Develop, implement, and assess Academic Standards, instructional practices, and College and Career Readiness, geared towards increasing student achievement.

Program Identifiers:

College:	GS
Major:	EDSC, (STEM Ed strand abbrev: PHDEDSCSED)
Degree:	PHD
CIP code:	13.0601

Education Sciences Required Coursework (minimum 12 credit hours)

Required coursework in the Education Sciences Program includes 12 credit hours in both quantitative and qualitative research methods. A minimum of three credit hours is required in both methodologies. Therefore, students may concentrate coursework in quantitative methods, qualitative methods, or both methodologies, earning a minimum of three credits in each methodology. Note that EDP/EPE 557 is a prerequisite course for ALL quantitative methods classes, but a course that does not count toward the EDI required coursework; EDP/EPE 557 will apply toward the required 9 credit hours outside STEM Education. Use the selections that follow to identify courses for the Education Science requirements.

Quantitative Methodology: Choose a minimum of one course from the following and/or other courses selected by the doctoral committee. (EDP/EPE 557 or 558 is a pre-requisite for all of the following courses) (3 – 6 credit hours)

Course	Title	Term	Grade	Credits
EDP/EPE 660	Research Design and Analysis in Education (Prerequisite: EDP/EPE 558 or 557 but EDP/EPE 558 is preferred) ***NOTE:*** *This course is* ***highly recommended*** *as it is required for all advanced quantitative methodology courses*			3
EDP 656	Methodology of Education Research (Prerequisite: EDP/EPE 557 but 558 is preferred)			3
EPE 619	Survey Research Methods in Education: Education Data (Prerequisite: EDP/EPE 557 or permission of instructor)			3
EDP/EPE 620	Topics and Methods of Evaluation (Prerequisite: EDP/EPE 557.)			3
EDP/EPE 621	Advanced Topics and Methods of Evaluation (Prerequisite: EDP/EPE 620 or SOC 622 or permission of instructor)			3
EDP/EPE 679	Introduction to Measurement Theory and Techniques (Prerequisite: EDP/EPE 660, but EDP/EPE 522 is also helpful to take prior to 679, but not required)			3

Qualitative Methodology: Choose a minimum of one course from the following - additional courses may be selected by the doctoral committee (other course options might include SOC 680, SOC 681, SOC 682) (3 – 6 credit hours)

Course	Title	Term	Grade	Credits
EPE 663	Field Studies in Educational Institutions			3
				3

Advanced Methodology Course: Choose a minimum of one course from the following – to be selected by doctoral committee (3 credits hours)

Course	Title	Term	Grade	Credits
EDP/EPE 679	Introduction to Psychometric Methods (Prerequisite: EDP/EPE 660, but EDP/EPE 522 is also helpful to take prior to 679, but			3

	not required)			
EDP/EPE 707	Multivariate Analysis in Education Research (Prerequisite: EDP/EPE 660)			3
EDP/EPE 711	Advanced Quantitative Methods (can be repeated up to maximum of 12 hours)			3
EDP/EPE 712	Advanced Psychometric Methods (can be repeated up to maximum of 12 hours)			3
EPE 763	Advanced Field Studies (Advanced Qualitative Methodology) (Prerequisite: EPE 663)			3

STEM Education Strand Required Coursework (minimum 36 credit hours)

The STEM Education Strand within the EDI program requires a STEM Education Core:

Choose a minimum of 5 courses (15 credit hours)

Course	Title	Term	Grade	Credits
SEM 603	Curriculum and Instruction in STEM Education			3
SEM 620	Equity in STEM Education			3
SEM 706	Research in STEM Education			3
SEM 613	Effective Use of Technology for Modeling-Based Inquiry in STEM Education			3
History of Education (Select 1)				
SEM 604	History of STEM Education			3
EPE 651	(P-20) History of Education in the United States			3
EPE 653	History of Higher Education			3
EPE 797	History of Research on Education			3

Required STEM Methods Core: Choose a minimum of 3 courses
(9 credit hours)

Course	Title	Term	Grade	Credits
SEM 575	See Blue Mathematics Clinic			3
EGR 599	Topics in Engineering			3
SEM 504	Designing Project-Enhanced Environments in STEM Education			3
SEM 708	Engineering in STEM Education			3
SEM 770	Special Topics in STEM Education (Permission from Instructor)			3
EPE 672	College Teaching and Learning			3
GS 699	Practicum for College Teaching *(only for those in the College Teaching and Learning certificate program)*			3

Electives Outside STEM Education: Choose a minimum of 3 courses. (9 hours)
Outside elective credits may include courses in specific STEM content disciplines (i.e., science, technology, engineering, mathematics), STEM Education, Education, or other content disciplines. Doctoral committee may select additional electives based on student needs and program focus. Strong recommendations: **EPE 557, EPE 558**.

Course	Title	Term	Grade	Credits
EDP/EPE 557	Gathering, Analyzing, and Using Educational Data			3
				3
				3
				3
				3

Total Credit Hours	

45 credit hours required for Qualifying Exam

Doctoral Committee Members

The doctoral committee should be selected by the time the student completes 18 credit hours in the program. Committee members must sign below to indicate approval of coursework to proceed with the qualifying exam.

Name	Role	Department	Graduate Faculty Status	Program Approval Signature	Signature Date
	Chair				
	member				
	member				
	member				

Student Signature Date

Program Progression

Activity	Date/Semester	Other	Advisor Signature, Date
Semester Admitted			
Semester Coursework Initiated			
Qualifying Exam		☐ Pass ☐ Fail	
Dissertation Approval			
Dissertation Defense		☐ Pass ☐ Fail	