

## CHANGE MASTERS DEGREE PROGRAM FORM

### 1. GENERAL INFORMATION

College:	Education	Department:	Science, Technology, Engineering, and Mathematics (STEM) Education		
Current Major Name:	STEM Education	Proposed Major Name:			
Current Degree Title:	Masters of Science, STEM Education	Proposed Degree Title:			
Formal Option(s):		Proposed Formal Option(s):	<i>Option 1: STEM Education Teacher Leadership with Certification Rank II; Option 2: STEM Education Non-Certification</i>		
Specialty Fields w/in Formal Option:		Proposed Specialty Fields w/in Formal Options:			
Date of Contact with Associate Provost for Academic Administration <sup>1</sup> :	3.04.13				
Bulletin (yr & pgs):	Graduate Bulletin pp 343-344	CIP Code <sup>1</sup> :	13.1399	Today's Date:	03.04.13
Accrediting Agency (if applicable):	National Council for Accreditation of Teacher Education and Kentucky Education Professional Standards Board				
Requested Effective Date:	<input checked="" type="checkbox"/> Semester following approval.	OR	<input type="checkbox"/> Specific Date <sup>2</sup> :		
Dept. Contact Person:	Rebecca Krall	Phone:	257.2176	Email:	rebecca.krall@uky.edu

### 2. CHANGE(S) IN PROGRAM REQUIREMENTS

		<u>Current</u>	<u>Proposed</u>
1.	Number of transfer credits allowed (Maximum is Graduate School limit of 9 hours or 25% of course work)	9	
2.	Residence requirement (if applicable)		
3.	Language(s) and/or skill(s) required	N/A	
4.	Termination criteria		
5.	Plan A Degree Plan requirements <sup>3</sup> (thesis)	Thesis action research/teacher leadership project required with oral defense of written work	
6.	Plan B Degree Plan requirements <sup>3</sup> (non-thesis)	Not an option	
7.	Distribution of course levels required	one-half 600+ level and two-	

<sup>1</sup> Prior to filling out this form, you MUST contact the Associate Provost for Academic Administration (APAA). If you do not know the CIP code, the APAA can provide you with that during the contact.

<sup>2</sup> Program changes are typically made effective for the semester following approval. No changes will be made effective until all approvals are received.

<sup>3</sup> If there is only one plan for the degree, plans involving a thesis (or the equivalent in studio work, etc.) should be discussed under Plan A and those not involving a thesis should be discussed under Plan B.

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		thirds in organized courses	
(At least one-half must be at 600+ level & two-thirds must be in organized courses.)			
8.	Required courses (if applicable)	3 required hours in SEM 610; 9 additional hours from the following: SEM 603, 604, 613, 701, 704, 706, 708, or 770	<p><i>Option 1: Teacher Leadership</i>  <i>3 required hours in SEM 610; 9 additional hours from the following choices: SEM 603, 604, 613, 620, 670, 674, 701, 702, 703, 704, 706, 708 770</i></p> <p><i>Option 2: STEM Education without certification: 3 required hours in SEM 603, and 9 additional hours from the following choices: SEM 604, 613, 620, 670, 674, 701, 702, 703, 704, 706, 708, 770</i></p>
9.	Required distribution of courses within program (if applicable)	12 hours of SEM STEM Education; 12 hours in STEM content area(s); 6 hours in EDL	<i>12 hours of SEM STEM Education; 12 hours in STEM content area(s); 6 hours in STEM/STEM Education/Education advisor-approved electives</i>
10.	Final examination requirements	Oral defense of written thesis	
11.	Explain whether the proposed changes to the program (as described in sections 1 to 10) involve courses offered by another department/program. <u>Routing Signature Log must include approval by faculty of additional department(s).</u>		
	Changes to program will not directly affect other departments.		
12.	List any other requirements not covered above?		
	N/A		
13.	Please explain the rationale for changes. If the rationale involves accreditation requirements, please include specific references to those requirements.		
	<p>Last updates to the redesigned Master of Science Program in STEM Education were approved Spring 2011 to reflect changes mandated by 16 KAR 5:010 Section 12 and changes in Advanced Master's Degree programs offered in the College of Education. These changes reflected the teacher leadership specialization in all Advanced Master's Degree programs offering rank change for teachers, and that allow teachers to develop 21<sup>st</sup> Century skills and concepts that they can implement into their instruction. The changes also supported teachers' development of background skills and knowledge needed to become STEM Education leaders in their schools.</p> <p>The current proposed program changes will develop a second General STEM Education strand in the Master of Science program targeting students that are not K-12 teachers. The changes will offer non-K-12 educators the ability to practice 21st century skills and concepts that can be applied in higher education and non-traditional educational settings. The changes also will give non-K-12 educators background skills and knowledge needed to become leaders in STEM Education within their area of expertise, their communities, the Commonwealth, and beyond.</p>		

# CHANGE MASTERS DEGREE PROGRAM FORM

## Signature Routing Log

### General Information:

Proposal Name: Master of Science in STEM Education

Proposal Contact Person Name: Rebecca Krall Phone: 257-  
2176 Email: rebecca.krall@uky.edu

### INSTRUCTIONS:

Identify the groups or individuals reviewing the proposal; note the date of approval; offer a contact person for each entry; and obtain signature of person authorized to report approval.

### Internal College Approvals and Course Cross-listing Approvals:

Reviewing Group	Date Approved	Contact Person (name/phone/email)	Signature
Jennifer Wilhelm		Jennifer Wilhelm / 257.1291 / Jennifer.wilhelm@uky.edu	
		/ /	
		/ /	
		/ /	
		/ /	

### External-to-College Approvals:

Council	Date Approved	Signature	Approval of Revision <sup>4</sup>
Undergraduate Council			
Graduate Council			
Health Care Colleges Council			
Senate Council Approval		University Senate Approval	

Comments:

<sup>4</sup> Councils use this space to indicate approval of revisions made subsequent to that council's approval, if deemed necessary by the revising council.



**Department of Science, Technology, Engineering, and Mathematics (STEM) Education**  
**Curriculum Contract – Master’s Verification**  
**Option I – Master’s Degree with Rank II Certification – STEM Education**  
*STEM PLUS<sup>+</sup> – Producing +eacher Leaders for rUral/Urban Schools*

Please TYPE

<b>Name</b>				
<b>Email</b>				
<b>Address</b>				
	<b>Street</b>	<b>City</b>	<b>State</b>	<b>Zip</b>
<b>Phone</b>				
	<b>Home</b>	<b>Work</b>	<b>Cell/Other</b>	<b>Semester of Admission to Master’s Program</b>

**Professional Goals:** Briefly describe the professional growth goals you hope to meet in pursuing the Rank II Certification and STEM Education Master’s Degree. Please attach a copy of your Professional Growth Plan.

**Program Goals:** In helping you develop your own professional goals, the STEM PLUS<sup>+</sup> Master’s degree program will also focus on helping you:

1. Connect theory and practice through reflection, teaching, scholarship, and STEM educational action research.
2. Use student achievement data to 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, learning, student achievement, and College and Career Readiness.
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, geared towards increasing student achievement.

**Required STEM Education Core:** SEM 610 required; choose 3 additional courses (Include courses addressing pedagogy, history, equity, and technology) (12 hours)

Course	Title	Term	Grade	Credits
SEM 603	Curriculum and Instruction in STEM Education			3
SEM 604	History of STEM Education			3
<b>SEM 610</b>	<b><i>Teacher Leadership in STEM Education (required)</i></b>			<b>3</b>
SEM 613	Effective Use of Technology for Modeling-Based Inquiry in STEM Education			3

SEM 620	Equity in STEM Education			3
SEM 670	Advanced Elementary Mathematics Methods			3
SEM 674	Advanced Studies in Teaching Elementary School Science			3
SEM 675	Mathematics Clinic			3
SEM 701	History of Mathematics Education			3
SEM 704	Designing Project-Enhanced Environments in STEM Education			3
SEM 706	Research in STEM Education			3
SEM 708	Engineering in STEM Education			3
SEM 770	Special Topics in STEM Education:			3

**Specialization STEM Coursework:** Choose 12 hours in STEM content area(s) outside the College of Education. See attached list for course suggestions. *(Recommended: 6 hours in your area of expertise and 6 hours outside of your area of expertise).*  
(12 hours)

Course	Title	Term	Grade	Credits
				3
				3
				3
				3
				3
				3

**Elective Leadership Coursework:** Choose from the following  
(6 hours)

Course	Title	Term	Grade	Credits
EDC/EPE/EDP 522	Educational Assessment			3
EDC 548	Instructional Technology Leadership			3
EDC 732	Curriculum Design for Learning and Leading			3
EDC 733	Leadership in Curriculum & Instruction: Strategies for Analytic Practice			3
EDL 600	Leadership for Learning-Centered Schools	Fall		3
EDL 601	Building a Professional Learning Community	Fall		1
EDL 602	Leadership Roles in Professional Learning Communities	Fall		1
EDL 603	Leadership for Student Learning	Fall		1
EDL 604	Leadership in Professional Learning Communities	Fall		3
EDL 605	Legal Rights and Responsibilities of Students	Spring		1
EDL 606	Legal Rights and Responsibilities for Teachers	Spring		1
EDL 607	Teacher Responsibilities in School-Based Decision Making	Spring		1
EDL 608	School Law and Governance for Teachers	Spring		3
EDL 609	Technology Leadership	Summer		1
EDL 610	Distributed Leadership in Schools	Summer		1
EDL 611	Current Issues for Education Leaders	Summer		1
EDL 612	Leadership for Technology and Innovation	Summer		3
EDL 613	Leadership in the Public Context of Education	Spring		1
EDL 614	Partnerships for Closing Achievement Gaps	Spring		1
EDL 615	Leadership for Response to Intervention in Inclusive Classrooms	Spring		1

EDL 616	Leadership for School as Inclusive Community	Spring		3
EDL 617	Teacher Leadership for Instructional Teams	Fall		1
EDL 618	Introduction to Leading Action Research for School Renewal	Fall		1
EDL 619	Evidence-Based Decision Making	Fall		1
EDL 661	School Technology Leadership			3
EDL 662	Digital Age Learning and School Technology Leadership			3
EDL 663	Professional Development for School Technology Leadership			3
EDL 664	School Technology Leadership for School Improvement			3
EDL 665	School Technology Leadership for Digital Citizenship			3

<b>Total Credit Hours</b>				
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*Minimum 30 credit hours required for graduation and Rank II certification*

**Continuous Assessment**

Checkpoint	Date
<b>Satisfactory Entry Review</b>	
<b>Satisfactory Mid-point Review</b>	
<b>Satisfactory Exit Portfolio/Review</b>	

**Master's Committee:**

Member	Department
<b>, Chair</b>	

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Student Signature \_\_\_\_\_ Date \_\_\_\_\_

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Advisory Signature \_\_\_\_\_ Date \_\_\_\_\_



**Department of Science, Technology, Engineering, and Mathematics (STEM) Education**  
**Curriculum Contract – Master’s Verification**  
**Option II - Master’s Degree– STEM Education – no certification option**  
*STEM PLUS<sup>+</sup> – Producing +eacher Leaders for rUral/Urban Schools*

Please TYPE

<b>Name</b>				
<b>Email</b>				
<b>Address</b>				
	<b>Street</b>	<b>City</b>	<b>State</b>	<b>Zip</b>
<b>Phone</b>				<b>Semester of Admission to Master’s Program</b>
	<b>Home</b>	<b>Work</b>	<b>Cell/Other</b>	

**Professional Goals:** Briefly describe the professional growth goals you hope to meet in pursuing the Rank II Certification and STEM Education Master’s Degree. Please attach a copy of your Professional Growth Plan.

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3. Explore uses of appropriate assessments and technological tools to enhance STEM teaching, learning, student achievement, and College and Career Readiness.
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, geared towards increasing student achievement.

**Required STEM Education Core:** SEM 603 is required, then select 3 additional courses (Include courses addressing pedagogy, history, equity, and technology) (12 hours)

Course	Title	Term	Grade	Credits
SEM 603	Curriculum and Instruction in STEM Education			3
SEM 604	History of STEM Education			3
SEM 613	Effective Use of Technology for Modeling-Based Inquiry in STEM Education			3
SEM 620	Equity in STEM Education			3

SEM 670	Advanced Elementary Mathematics Methods			3
SEM 674	Advanced Studies in Teaching Elementary School Science			3
SEM 675	Mathematics Clinic			3
SEM 701	History of Mathematics Education			3
SEM 704	Designing Project-Enhanced Environments in STEM Education			3
SEM 706	Research in STEM Education			3
SEM 708	Engineering in STEM Education			3
SEM 770	Special Topics in STEM Education:			3

**Specialization STEM Coursework:** Choose 12 hours in STEM content area(s) outside the College of Education. See attached list for course suggestions. *(Recommended: 6 hours in your area of expertise and 6 hours outside of your area of expertise).*  
(12 hours)

Course	Title	Term	Grade	Credits
				3
				3
				3
				3
				3
				3

**Specialization Electives :** Choose 6 hours of coursework electives in research, STEM education, education, or other area (independent study permitted) to further develop expertise or thesis. (Suggested coursework, but not limited to: EDP/EPE 557, EDP/EPE 558, EPE 660, EDP 610, EDP 611, EDP 612)

Course	Title	Term	Grade	Credits
<b>Total Credit Hours</b>				

*Minimum 30 credit hours required for graduation and Rank II certification*

**Continuous Assessment**

Checkpoint	Date
<b>Satisfactory Entry Review</b>	
<b>Satisfactory Mid-point Review</b>	
<b>Satisfactory Exit Portfolio/Review</b>	

**Master's Committee:**

Member	Department
, Chair	



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Student Signature

Date

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Advisory Signature

Date