

The completed and signed proposal should be submitted by the Dean's Office to: curriculumplanning@asu.edu.
 Before academic units can advertise undergraduate concentrations or include them in their offerings as described in the university catalogs, they must be recommended for approval by the Senate Curriculum and Academic Programs Committee and approved by the Executive Vice President and Provost of the University.

Definition and minimum requirements:

A concentration is a formalized selection of courses within a major.

- A concentration requires a minimum of 15 semester hours of which at least 9 semester hours must be upper division. Specialized concentrations (e.g., BIS Concentrations) may have additional or different requirements.
- A concentration is offered by a single unit and is intended exclusively for students pursuing a particular major. If a concentration consists of courses from more than one college the approval of each college Dean is required.

College/School/Institute: Mary Lou Fulton Teachers College

Department/Division/School: Division of Teacher Preparation

Proposing Faculty Group (if applicable): Elementary Education

If this is an official joint degree program? No

If "Yes" List all the additional college(s)/school(s)/institute(s) that will be involved in offering the degree program and providing the necessary resources. Note: All units offering this program must have collaborated in the proposal development and completed the appropriate unit and college/school approvals.

Existing degree type and name of degree program under which this concentration will be established: B.A.E. Elementary Education

Proposed Concentration Name: STEM (Science, Technology, Engineering, Mathematics)

Requested effective catalog year? 2013-2014

For deadline dates see: [Curriculum Workflow Calendars](#).

Delivery method: On campus

Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

Campus/Locations:

Indicate all locations where this program will be offered.

- Downtown Phoenix Polytechnic Tempe West Other:

Proposal Contact

Name:	Liz Hinde	Title:	Director of Teacher Preparation
Phone number:	602-543-6315	Email:	Elizabeth.Hinde@asu.edu

DEAN APPROVAL(S)

This proposal has been approved by all necessary unit and College/School levels of review. I recommend implementation of the proposed program

College/School/Division Dean name: Mari Koerner

Signature Mari Koerner **Date:** 10 /12/2012

College/School/Division Dean name: (if more than one college involved): _____

Signature _____ **Date:** / /20

Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.

1. Overview

A. Description

Provide a brief description of the new concentration (including the specific focus of the new concentration, relationship to other concentrations in this degree program, etc).

The BAE in Elementary Education with a STEM concentration has coursework that leads to an elementary education teaching certificate and highly qualified status in science or math. This program differs from the Elementary Ed degree in that it offers students a firm grounding in math and science content with current research and best practices, accompanied by real-world classroom experience in math and science classrooms.

B. Demand

Explain the unit's need for the new concentration (e.g., market demand, research base, direction of the discipline, and interdisciplinary considerations). How will the new concentration complement the existing degree program?

There is a growing demand for STEM educators nationally, especially in elementary and middle grades. This major will produce graduates who will meet the growing demand for STEM educators, specifically in math and science. Graduates of this concentration will have the required number of credits needed to be deemed highly qualified to teach math or science.

2. Support and Impact

A. Faculty governance

Provide a supporting letter from the chair of the academic unit verifying that the proposed concentration has received faculty approval through appropriate governance procedures in the unit and that the unit has the resources to support the concentration as presented in the proposal, without impacting core course resources.

B. Other related programs

Identify other related ASU programs and outline how the new concentration will complement these existing ASU programs. (If applicable, statements of support from potentially-affected academic unit administrators need to be included with this proposal submission.)

This is a specialized program that meets the needs of a targeted population so it will not impact other programs. Since it is also a teacher certification program, no other college offers the state required courses and experiences that are offered in Teachers College.

C. Letter(s) of support

Provide a supporting letter from each college/school dean from which individual courses, or the entire concentration, are taken.

3. Academic Curriculum and Requirements

A. Knowledge, competencies, and skills

List the knowledge, competencies, and skills (learning outcomes) students should have when they complete this proposed concentration. Examples of program learning outcomes can be found at (<http://www.asu.edu/oue/assessment.html>).

Graduates of this program will be highly qualified in math or science per the Arizona Department of Education requirements. Being highly qualified entails successful completion of 24 credits in math or science. Students who complete this program will be able to pass the AEPA (Arizona Educator Proficiency Assessment) in both Elementary Education and middle grades math or science.

B. Admissions criteria

List the admissions criteria for the proposed concentration. If they are identical to the admission criteria for the existing major and degree program under which this concentration will be established, please note that here.

The admissions criteria for this program will be the same as for the BAE in Elementary Education.

C. Curricular structure

Provide the curricular structure for this concentration. Be specific in listing required courses and specify the total minimum number of hours required for the concentration.

There are more required courses that are not able to be submitted in these boxes. Please refer to majormap.

Required Core Courses for the Degree/Major

Prefix	Number	Title	Is this a new Course?	Credit Hours
BLE	408	SEI for Linguistically Diverse Learners	No	3
EDP	311	Educational Psychology for Future Teachers	No	3
EED	433	Language Method Management and Assessment	No	3
RDG	322	Language Literacy 1 in Elementary Schools	No	3
SPF	301	Culture and Schooling	No	3
<i>Section sub-total:</i>				15

Required Concentration Courses

Prefix	Number	Title	Is this a new Course?	Credit Hours
MTE	301	Investigating Change: Patterns, Functions, and Modeling	No	3
MTE	412	Mathematics in Elementary Schools	No-crosslisted	3
SCN	411	Science in Elementary Schools	No- crosslisted	3
SCN	400	Sustainabilty for the Elementary Teacher	No	3
<i>Section sub-total:</i>				12

Elective Concentration Courses

Prefix	Number	Title	Is this a new Course?	Credit Hours
Math or Science course			No	3
Math or Science course			No	3
			(Select one)	
			(Select one)	
			(Select one)	
<i>Section sub-total:</i>				6

Other Concentration Requirements	Credit Hours
E.g. – Capstone experience, internship, clinical requirements, field studies, foreign language skills as applicable	
EED 396-Field Experience I	2
EED 397- Field Experience II	2
EED 478- Student Teaching in the Elementary School	7
EED 478- Student Teaching in the Elementary School	9
	Section sub-total: 20
Total minimum credit hours required for concentration	

Academic Curriculum and Requirements (Continued)

D. Minimum residency requirement

How many hours of the concentration must be ASU credit?

56

E. Provide a brief course description for each new course.

Not required

Note: All new required courses should be submitted in Curriculum Changemaker and ready for Provost’s Office approval before this concentration is put on Curriculum and Academic Programs Committee (CAPC) agenda.

4. Administration and Resources

A. How will the proposed concentration be administered (including admissions, student advisement, retention, etc.)?

Admissions and advising will follow the same protocol as our Elementary Education majors.

B. What are enrollment projections for the next three years?

	1st Year	2nd Year (Yr. 1 continuing + new entering)	3rd Year (Yr. 1 & 2 continuing + new entering)
Number of Students (Headcount)	25	50	100

C. Resources

What are the resource implications for the proposed concentration, including any projected budget needs? Will new books, library holdings, equipment, laboratory space and/or personnel be required now or in the future? If multiple units/programs will collaborate in offering this concentration please discuss the resource contribution of each participating program. Letters of support must be included from all academic units that will commit resources to this concentration.

Not required.

D. Primary Faculty

List the primary faculty participants regarding this proposed concentration. For interdisciplinary concentrations, please include relevant names of faculty members from across the University.

- Peter Rillero, Ph.D. Associate Professor Science Education
- Ed Lyon, Ph.D. Assistant Professor Science Education
- Molina Walters, Ph.D Clinical Associate Professor Elementary Science Education
- Terri Kurz, Ph. D, Assistant Professor, Math Education
- Ron Zambo, Ph.D. Associate Professor Elementary Math Education
- Yolanda De La Cruz, Ph.D, Associate Professor Math Education
- Sue Larson, M.A., Sr. Math Education Lecturer
- Amber Brass, M.A., Clinical Assistant Professor Math Education

5. Additional Materials**A. Major Map**

Attach a copy of the “proposed” major map for this degree program and each concentration(s) to be offered. Instructions on how to create a “proposed major map” in BAMM can be found in the Build a Major Map Training Guide.

B. Appendix

Complete and attach the Appendix document.

C. Attach other information that will be useful to the review committees and the Office of the Provost.

APPENDIX
OPERATIONAL INFORMATION FOR UNDERGRADUATE CONCENTRATIONS

(This information is used to populate the Degree Search/catalog website.
Please consider the student audience in creating your text.)

1. **Proposed Concentration Name:** Elementary Education STEM (Science, Technology, Engineering, Mathematics)

2. **Program Description** (150 words maximum)

The BAE in elementary education with a STEM (math and science) emphasis has course work that leads to an elementary education teaching certificate and highly qualified teaching status in science or math. This program offers students a firm grounding in math and science content with current research and best practices, accompanied by real-world classroom experience in math and science classrooms.

3. **Contact and Support Information**

Building Name, code and room number: (<i>Search ASU map</i>)	ED 120
Program office telephone number: (<i>i.e. 480/965-2100</i>)	480/965-5555
Program Email Address:	educationadvising@asu.edu
Program Website Address:	http://education.asu.edu

4. **Delivery/Campus Information Delivery: On campus**

Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.

5. **Campus/Locations:** indicate all locations where this program will be offered.

Downtown Phoenix Polytechnic Tempe West Other:

6. **Additional Program Description Information**

A. Additional program fee required for this program? No

B. Does this program have a second language requirement? No

7. **Career Opportunities & Concentrations**

Provide a brief description of career opportunities available for this degree program. If program will have concentrations, provide a brief description for each concentration. (150 words maximum)

There is a demand for highly qualified elementary teachers in math or science in Arizona. According to recent research on teacher supply and demand, the demand for students highly qualified in math or science is very strong. Job opportunities in a fast growing state such as Arizona are numerous. Demand for math and science teachers will continue to grow.

8. **Additional Admission Requirements**

If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.)

None

9. **Keywords**

List all keywords used to search for this program. Keywords should be specific to the proposed program.

Teaching, Math, Science, STEM, education, children, teacher

10. Advising Committee Code

List the existing advising committee code to be associated with this degree. UGTEW

Note: If a new advising committee needs to be created, please complete the following form:

[Proposal to create an undergraduate advising committee](#)

11. First Required Math Course

List the first math course required in the major map. MAT 142

12. Western Undergraduate Exchange (WUE) Eligible:

Has a request been submitted to the Provost by the Dean to consider this degree program as eligible for WUE?

(Select Yes/No) NO

Note: No action will be taken during the implementation process with regards to WUE until approval is received from the Provost.

13. Area(s) of Interest

A. Select **one (1)** primary Area of Interest from the list below that applies to this program.

- | | |
|--|---|
| <input type="checkbox"/> <u>Architecture, Construction & Design</u> | <input type="checkbox"/> <u>Engineering & Technology</u> |
| <input type="checkbox"/> <u>Artistic Expression & Performance</u> | <input type="checkbox"/> <u>Environmental Issues & Physical Science</u> |
| <input type="checkbox"/> <u>Biological Sciences, Health & Wellness</u> | <input type="checkbox"/> <u>Interdisciplinary Studies</u> |
| <input type="checkbox"/> <u>Business, Management & Economics</u> | <input type="checkbox"/> <u>Languages & Cultures</u> |
| <input type="checkbox"/> <u>Communication & Media</u> | <input type="checkbox"/> <u>Law & Justice</u> |
| <input type="checkbox"/> <u>Computing & Mathematics</u> | <input type="checkbox"/> <u>Social Science, Policies & Issues</u> |
| <input checked="" type="checkbox"/> <u>Education & Teaching</u> | |

B. Select **any** additional Areas of Interest that apply to this program from the list below.

- | | |
|--|---|
| <input type="checkbox"/> <u>Architecture, Construction & Design</u> | <input type="checkbox"/> <u>Engineering & Technology</u> |
| <input type="checkbox"/> <u>Artistic Expression & Performance</u> | <input type="checkbox"/> <u>Environmental Issues & Physical Science</u> |
| <input type="checkbox"/> <u>Biological Sciences, Health & Wellness</u> | <input type="checkbox"/> <u>Interdisciplinary Studies</u> |
| <input type="checkbox"/> <u>Business, Management & Economics</u> | <input type="checkbox"/> <u>Languages & Cultures</u> |
| <input type="checkbox"/> <u>Communication & Media</u> | <input type="checkbox"/> <u>Law & Justice</u> |
| <input type="checkbox"/> <u>Computing & Mathematics</u> | <input type="checkbox"/> <u>Social Science, Policies & Issues</u> |
| <input type="checkbox"/> <u>Education & Teaching</u> | |

The following fields are to be completed by the Office of the Executive Vice President and Provost of the University.

CIP Code: _____

Plan Code:



2013 - 2014 Major Map
Elementary Education (Science, Technology, Engineering and Mathematics), BAE
(Proposed)

Term 1	0 - 14 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: English for Foreign Students	3	C	<ul style="list-style-type: none"> An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses ASU Math Placement Exam score determines placement in Mathematics course ASU 101 or College specific equivalent First Year Seminar required of all freshman students
		MAT 142: College Mathematics (MA)	3	C	
		GCU 113: United States and Arizona Social Studies (SB & H)	3	C	
		Natural Science - Quantitative (SQ) OR Natural Science - General (SG)	4	C	
		TEL 101: The Teachers College Experience	1		
		Term hours subtotal:	14		
Term 2	15 - 30 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: English for Foreign Students	3	C	
		BLE 220: Foundations of Structured English Immersion OR RDG 291: Children's Literature (HU) OR SPE 222: Orientation to Education of Exceptional Children (SB & C)	3	C	
		Natural Science - Quantitative (SQ) OR Natural Science - General (SG)	4	C	
		EDT 180: Problem Solving using Digital Technology Applications (CS) OR EDT 321: Computer Literacy (CS)	3	C	
		GCU 114: World Social Studies (SB & G & H)	3		
		Complete ENG 101 OR ENG 105 OR ENG 107 course(s).			
		Milestone: DPS Fingerprint Clearance Card.			
		Term hours subtotal:	16		
Term 3	31 - 45 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		BLE 220: Foundations of Structured English Immersion OR RDG 291: Children's Literature (HU) OR SPE 222: Orientation to Education of Exceptional Children (SB & C)	3	C	
		MTE 280: Investigating Quantity: Number, Operations & Numeration Systems	3	C	
		USL 216: Service Learning	3	C	
		Approved math or science course	3	C	
		Art, Dance, Music or Theater course AND Humanities, Fine Arts and Design (HU)	3		
		Complete Mathematics (MA) requirement.			
		Milestone: Intent to Progress Online Form.			
		Term hours subtotal:	15		
Term 4	46 - 61 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		MTE 281: Investigating Space: Geometry, Measurement, and Visualization	3	C	Must complete at least 60 credits including foundational coursework to progress into iTeachAZ.
		Complete 2 courses: BLE 220: Foundations of Structured English Immersion OR RDG 291: Children's Literature (HU) OR SPE 222: Orientation to Education of Exceptional Children (SB & C)	6	C	
		Natural Science - Quantitative (SQ)	4	C	
		Approved math or science course	3	C	
		Milestone: Must attend an iTeachAZ Enrollment Workshop			
		Minimum 2.50 GPA ASU Cumulative.			
		Term hours subtotal:	16		
Term 5	62 - 78 Credit Hours		Hours	Minimum Grade	Notes
		BLE 408: SEI for Linguistically Diverse Learners	3	C	
		EDP 311: Educational Psychology for Future Teachers (SB)	3	C	
		EED 396: Field Experience I	2	Y	
		EED 433: Language Method Management and Assessment	3	C	

MTE 301: Investigating Change: Patterns, Functions, and Modeling	3	C
SPF 301: Culture and Schooling (L)	3	C
Minimum 2.50 GPA ASU Cumulative.		
Term hours subtotal:	17	

Term 6 79 - 92 Credit Hours	Hours	Minimum Grade	Notes
EED 397: Field Experience II	2	Y	
MTE 412: Mathematics in Elementary Schools	3	C	
RDG 322: Language Literacy 1 in Elementary Schools	3	C	
SCN 411: Science in Elementary Schools	3	C	
SCN 494: Sustainability for the Elementary Teacher	3	C	
Minimum 2.50 GPA ASU Cumulative.			
Term hours subtotal:	14		

Term 7 93 - 108 Credit Hours	Hours	Minimum Grade	Notes
EED 324: Social Studies in Elementary Schools	3	C	
EED 478: Student Teaching in the Elementary School	7	Y	
PPE 310: Health Literacy: Creating Healthy and Active Schools (L)	3	C	
RDG 413: Language Literacy 2 in Elementary Schools	3	C	
Minimum 2.50 GPA ASU Cumulative.			
Term hours subtotal:	16		

Term 8 109 - 120 Credit Hours	Hours	Minimum Grade	Notes
EED 478: Student Teaching in the Elementary School	9	Y	
SPE 416: Quality Practices in the Collaborative Classroom	3	C	
Term hours subtotal:	12		

Art, Dance, Music or Theater course

- AME Elective
- ARA Elective
- ARE Elective
- ARS Elective
- ART Elective
- DAH Elective
- DCE Elective
- MTC Elective
- MUE Elective
- THE Elective
- THP Elective

Total Hours: 120
Upper Division Hours: 45 minimum
Major GPA: 2.00 minimum
Cumulative GPA: minimum
Total hrs at ASU: 30 minimum
Hrs Resident Credit for Academic Recognition: minimum
Total Community College Hrs: maximum

General University Requirements Legend

- General Studies Core Requirements:
- Literacy and Critical Inquiry (L)
 - Mathematical Studies (MA)
 - Computer/Statistics/Quantitative Applications (CS)
 - Humanities, Fine Arts and Design (HU)
 - Social and Behavioral Sciences (SB)
 - Natural Science - Quantitative (SQ)
 - Natural Science - General (SG)

General Studies Awareness Requirements:

- Cultural Diversity in the U.S. (C)
 - Global Awareness (G)
 - Historical Awareness (H)
- First-Year Composition

General Studies designations listed on the major map are current for the 2013 - 2014 academic year.